The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[*The* MINING JOURNAL *is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.*]

. 2125.—VOL. XLVI. LONDON, SATURDAY, MAY 13, 1876. [WITH SUPPLEMENT.] {PRICE ..... SIXPENCE. PER ANNUM, BY POST, £1 4s.

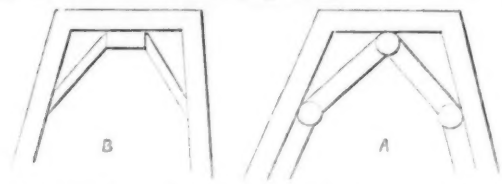
Royal School of Mines.

PROF. SMYTH'S LECTURES ON MINING—No. XXVII.

[BY OUR SPECIAL REPORTER.]

In the last lecture we considered some of the methods of timbering in levels of ordinary width, where the ground above and at the sides presents no special difficulty. In all of these cases there are many special points to be attended to practically which cannot be set forth in a course of lectures. Besides this there is great variation in different districts as to the cleverness of the men in setting the timber to the best advantage. For instance, in some cases there is great temptation to notch and cut the timber in different ways, so as to put it together with spikes and nails, all being methods tending to destroy the strength and tenacity of the fibres, and thus diminish the amount of resistance which the timber ought to bear. Again, you may sometimes see the curve of the timber, when a curved piece has to be used, placed the wrong way, it should be placed so that the pressure acts on the convexity of the curve. It may be as well to remember that sometimes timber which has been used for other purposes may be very conveniently used, as, for instance, timber from wrecks, where cheapness be a great consideration. Another point of great importance must be attended to, where the framework of the timber is lined with boards, laths, laggings, or bars, as they are variously termed, that no hollow space should be left behind any of them. If a wall or roof does not press firmly against the planks, &c., something should be introduced to wedge up the space, otherwise on a sudden rupture of the ground the masses would be rendered much more dangerous from the fall they would have, and would descend on the timber with the force of a hammer. Another point to be looked to, especially in working stratified deposits, inclined at various angles, is that the timber should be placed in the most satisfactory way—at right angles to the direction of the gallery. In working the deposits which are inclined at high angles, as in Belgium, Pembrokeshire, some instances in the Bristol coal field, &c., the roof may be such as to require a special support besides the usual framework, then the laggings are put in, and often brushwood, or other such substance, placed between, to prevent the great pressure forcing the small material through into the drift ways.

We come next to the timbering of larger spaces. Lodes remarkable for their width often give a great deal of trouble in the matter of timbering, sometimes the difficulty is got rid of by occupying only a small portion of the lode for levels, filling up the rest with broken stone. Such a plan answers very well when there are no deeper levels to deal with, but as a rule, while one level is being worked shafts will be sinking lower, so as to open out lower levels, from which to work up to the first ones; consequently the upper part must be supported, and this will mostly be by timber. In some of the Austrian salt mines, in the district of Salzburg, they have found great difficulty in supporting the walls and sides, from the tendency of the salt to press with very great force. It is a notorious matter in some of our mines in England that when they have to be driven through argillaceous materials, especially at great depths from the surface, the timber gets pressed together so much that it may be necessary to renew it within five or six months after the first driving. This, of course, gives rise to great expense, and various methods have been tried for overcoming it, but we cannot say at present with any great success. In the salt mines, for example, taking the form of level best adapted to resist pressure, it has been proposed to line the whole with blocks of wood, carefully cut and fitted together, like so many blocks of stone in masonry. In a country where wood is abundant this method might be carried out with a good deal of advantage, and in cases where it has been tried it is said to have been successful, more so as regards the longitudinal joints than others. In some cases the blocks have been alternately short and long, in others banded together as so much stone; or in some cases, again, one piece was partly inserted into another. The expense, as compared with ordinary timbering, was so great that it was found better to adopt the latter, and timber over two or three times. In the Great Comstock lode they have adopted a form of level very much like that of the old men's levels, and they use very thick timber, 8 to 13 in. square, carefully jointed together; the entire frame consisting of a cap piece, sole piece, and two pieces on each side. It is stated that this is the only form of timbering which has been at all successful in some of the mines, especially with the addition of strong lagging behind, sometimes as much as 2 or 3 in. thick. When the breadth of working becomes so great that the cap pieces are apt to give way various methods of supporting them are adopted. The timbering then becomes very expensive when you have cap pieces 8 or 9 ft. long. In the iron mines of Furness the distance of working are 9 or 10 ft. square, so that the cap pieces, as well as the stanchions, have to be of great size, and the cost of timbering is very great. If the principal part of the strain be from above on the cap pieces, it is very simple to place struts beneath them. In the pass-by, for instance, in the ordinary road of a mine it is the simplest plan to put in a single prop in the centre of the cap piece, or sometimes it may be a small piece of walling. In the metallic mines this cannot so conveniently be done, because you have to consider that the base is not permanent, for while you are probably sinking your shafts to a lower level, with the object of working up to the former one, under these circumstances, therefore, comes in the method of struts. In some German mines, where a considerable length of cap is used, and mostly where the lodes are very vertical, and you want to avoid resting the cap piece on the floor, it may be supported by struts hitched against the walls. In some instances, again, the cap may be used in two pieces, as being less expensive, each piece resting on a longitudinal piece down the centre, the latter piece being supported by struts as before. In some of the mines of southern France, in addition to the longitudinal piece supporting the cap, there are similar pieces along the walls, and these have struts between them (Fig. 28, A), and this method seems to have done very good service indeed. In other cases for the purpose of getting more head room there is a smaller cap piece at top between the side struts. (Fig. 28, B.)



The reliance will be, at least in the first instance, on stull pieces put in in the usual manner, but then one portion will have extra support in order to serve for purposes of travelling. The falling piece of the cap piece and the leg are footed on another transverse beam, laths are placed by the side of the timber, and then a quantity of refuse is stacked behind. This refuse, after it has been exposed to the pressure of the ground for some time, will give a good solid structure not liable to collapse. This method is used where the lodes run from 10 to 12 ft. wide. If we take another case, in the Great Devon Consols Mine, where the lode runs from 20 to 22 ft. wide, we find a stull piece 22 ft. long and 20 in. square; at some distance above comes another piece, 16 in. square, carrying the laths or planks on which the attle will be stacked. This latter piece is taken up below by means of 10-in. struts, or uprights, which rest on the first-mentioned stull piece. The greater part of the space between the upper and lower piece is filled with attle, the rest is left for travelling. Another variety of timbering where the lode is 24 ft. in breadth is as follows:—the leading point to begin with is to have a sole piece let well into the walls of the lode to a depth of 12 to 18 in., resting, therefore, on a kind of bracket; this piece is of red pine, 18 in. square. Footed on this sole piece are two pieces of 18-in. timber, which meet together at an angle above, at which point there is placed a longitudinal piece: sometimes these are additionally strengthened from below by other pieces within, and then by a transverse bar; and as they have to support a strong weight of attle, often from 10 to 50 fms., strong 3-in. planks are usually put in. Sometimes these pieces are made compound, and held together by strong iron clamps.

In some cases it has been proposed, and with a certain amount of success, to replace some of these wooden props by iron ones, and cast-iron props were recommended 25 years ago for use in some Yorkshire collieries. At the top of the pillar was a kind of capital, and on this rested a piece of wood, so as to give the prop a good bearing on the roof. The wooden portion was generally so broken after once using that it could not be used again, but it was intended that the iron props should be hooked out and used over and over again. Generally the props had a strongly flanged section: they answered their purpose pretty well, but were not followed out. Since then it has been proposed in the North of England to have iron props made in two pieces, jointed together by having a piece slid over them; these answered their purpose pretty well, but the method cannot be said to be a great success. According to some the working is economical, according to others the loss from breakage is very great. Experiments have been made on a large scale in some continental districts as to the use of wrought-iron, and a year or two ago the lecturer had visited some districts where these wrought-iron props were in use. This was especially the case in some Saxon collieries, where the pressure was so great as to destroy everything else except these props. A number of experiments had been carried out as to the best shape and size of the props, and it was found that the best shape was to put them in the levels in the form of an elipse; in one particular case this was 6 ft. 6 in. high by 4 ft. 6 in. wide. The section of the iron was something like that of a T-headed rail, the broad part being placed against the rock; sometimes they have been put in with only one joint at top, in other cases with a joint above and below. The best way of securing the joints is the simple one of having a collar sliding over the two pieces at the joint. The lecturer had also seen them of a horseshoe shape, resting on a flat piece below, and having dimensions as great as 10 ft. 6 in. high by 8 ft. 6 in. broad, but this form is not so strong as the former.

All the above arrangements require that you should have a certain amount of suitability in the ground about for there to be security. But in collieries sometimes, in metal mines frequently, there are cases where it would be impossible to put in successfully an arrangement of this kind without further precaution. Even in the Cornish granite there are cases where you could not get on in this way, because the men would have no time to get in the timber before they would be overwhelmed. For instance, on the eastern side of Newcastle an attempt was made at the colliery of St. John's to get the High Main seam, but the attempt to work it was interrupted by what looked like an ancient river bed. In the St. Lawrence colliery a drift was attempted to be driven, but failed at first from the weakness of the timber; then it was carried on by horizontal spilling, followed up by close timbering. After the level had been driven for some distance the bottom stone disappeared—went down underfoot; the floor also was, therefore, planked, and they pushed on the drift through gravelly quicksand and water to a distance of 32 yards: this was done by the method to be presently described. But this was found very expensive, and judged an imperfect plan, and, moreover, was liable to be interrupted by occasional gushes of water and sand at great pressure, so as to endanger the whole colliery, consequently the attempt was at last abandoned. To take another case which often occurs in metal mines: you may have in one part of the mine the ground so hard that it is difficult to make way through it at all; in other parts you may have the ground so soft that the difficulty will be to remove the material, and to get the opening secured.

In examining a cross-cut from the shaft to the lode you will often find it does not run in a straight line, but here and there turns to one side or the other for a distance, then runs on in the original direction. At each of these points of turning the men "lost their level;" the usual thing being that the men in cutting came to a place in the granite where the material was so soft as to ooze through the timbering, and they were obliged to take more care of the lagging, and get it as close as possible. They advanced foot by foot in this way till, perhaps, some unlucky joint gave way, or the men were less ready than they might be in putting in the timber; there came a rush, and the men were obliged to run for their lives. They had then to remove the material till they came to a place where, perhaps, pieces of timber had been laid across to keep it back; they then had to board up this part, and commence their level again on one hand or the other. There are several different methods adopted for working in such ground, known generally as spilling. These are greatly dependent on the nicety of workmanship, and the spirit and coolness of the men who carry out the work. These methods will be treated of in the next lecture.

RAILWAY WAGONS—RAILWAY ROLLING STOCK.

At the Institution of Civil Engineers, on Tuesday (Mr. W. H. BARLOW, Vice-President, in the chair), the first paper read was "On the Construction of Railway Wagons, with Special Reference to Economy in Dead Weights," by Mr. W. R. BROWN, Asso. Inst. C.E. The designing of a wagon had its peculiar difficulties, because in addition to ordinary strains, which could be calculated and allowed for, it was also subject to sudden and extraordinary strains, which defied calculation. It had not, therefore, been attempted to give a complete theoretical investigation of strains in this case, or to frame a design and dimensions based on theoretical principles. The dimensions found in the practice of the leading British railways had been assumed as substantially correct. What had been aimed at was to compare these with one another, checking them also by theory whenever this was possible, and so endeavouring to arrive at the lightest and most economical design, consistent with the practical conditions of the case.

In considering the subject, the principle then was that the strength of a wagon was not fixed, as in other structures, by the load it had to carry. It would, therefore, appear that the proper plan was to load a wagon as heavily as possible; and this brought to view the first point for enquiry—what was the best load for a wagon? The early wagons only carried 3 or 4 tons, and weighed as much or more; the load was gradually increased to 6 tons, and then to 8 and 10 tons, where it had stopped; although still the wagon was too strong for its load. There were yet many 6-ton wagons running, but few were now built—at least by railway companies; in fact, their tare, weight, and cost were not much less than that of a 10-ton wagon, while their load was little more than one-half. Thus the question was practically narrowed to 8 and 10-ton wagons. The difference in weight and cost of these was not great. It would seem, then, as though the 10-ton was decidedly the proper type, and that, as even here the factor of safety was far too high, a yet greater load might be resorted to. There were, however, two reasons against this; first, wagons had to be shifted on sidings and in yards by horse-power; and it was obviously undesirable that a wagon should be too heavy for a single horse to start it; secondly, it was comparatively seldom that a wagon was loaded to its full capacity. This question had been treated for French railways by M. Marché; for English railways there were no corresponding statistics. But looking to his figures, and remembering that if a 10-ton wagon were not loaded up to 8 tons, its extra weight and cost were absolutely wasted, it would appear that for general traffic the best load was probably 8 tons.

Special classes of wagons—light wagons for light traffic, and *vice versa*—had often been advocated, but there were two fatal objections—first, the light wagon might get a heavy load for its return journey; secondly, it might be put among a number of heavy wagons, and hence have to bear the same shocks, from which it would suffer more. The author thought, on the contrary, the aim should be to make all wagons precisely similar, and their parts interchangeable, which would result in a great advantage in repairs. A wagon might be divided into its parts thus:—A, wheels and axles; B, axle-boxes; C, springs; D, underframe, &c.; E, drawgear; F, buffers; and G, body.

A.—Wheels and Axles: The forces formed a couple, which produced the same breaking strain on every point of the axle. Why, then, was the wheel seat larger than either the journal for the centre? The axle, of course, broke under a blow given (say) by an obstruction on the line; but in the journal the shock was taken off by the spring, which lessened the effect there. Again, the axle was in the position of a beam fixed at one end and struck at the other. The greatest strain would, therefore, be at the fixed end, or close to the undisturbed wheel, and it would always be less in the middle than at one end. This accounted for the fact that axles generally broke just inside the wheel seat; hence, shoulders were objectionable, and probably also the great pressures now used in forcing on the wheels. The simplest form of wheel was the American chilled wheel. This might be made from Swedish or Lorne pig. In the ordinary form the difficulty lay in fastening tyres. The question of riveted tyres was discussed, and it was pointed out that unriveted tyres might now be had at a very slight increase in cost. Wooden wheels get rid of the skeleton, the tyre being put direct on to the wooden body; the weight was less than iron wheels, the cost was about the same, and their elasticity appeared to have great effect in preventing the breakage of axles.

B.—Axle-Boxes: The main question here was as to oil or grease lubrication. The advantage of grease was that it was cheap in first cost and readily applied; the axle boxes were also lighter and less expensive. On the other hand, oil gave much less trouble in lubricating, and less risk of hot boxes, while the tractive force required was less. Axle guards of 2½ in. by ¾ in. crowns and 2¼ in. by ¾ in. wings were quite strong enough; in many specifications these dimensions were excessive.

C.—Springs: No alteration was likely to be made in the form of springs. Their strength was only the sum of the strengths of the plates, as they act independently; hence for strength and lightness the plates should be few and deep; perhaps the tendency was now too much in the other direction.

D.—Underframe: No great improvement was probable in the disposition of the material in wooden underframes; but the diagonals should always incline from the centre towards the buffers. The disadvantage of wood was that it only acted as a strut, not as a tie; hence tie rods were necessary. A combination of iron and wood might seem preferable, but such combinations were rarely successful. Wood was, however, shown by comparison to be much lighter and cheaper than iron; the only advantage of the latter was durability, and this in railway wagons was not of first-class importance. The usual scantling in wood was now 12 in. by 6 in. This might be reduced for sole bars, headstocks, and middle bearers.

E.—Draw-Gear: The advantage of this being continuous was that it diminished the strain on the wagon body; the disadvantage was the extra weight and cost, as the draw-bars did nothing to assist the underframe. This might be overcome by a new design, in which the tie rods acted as draw-bars, so that if one broke the rest would still hold; and there was no weld in the draw-bar.

F.—Buffers: The tendency was to do away with spring buffers, at least in coal wagons; they were at a great disadvantage where most of the stock had dead buffers only. For the more expensive class of wagons wrought-iron buffers seemed to be superseding cast-iron.

G.—Body: Short wagons were desirable rather than long wagons, because (a) they were cheaper and lighter, saving much in timber, (b) they were much handier in themselves and in shunting, and made trains shorter, and (c) they prevented the sole bars from "hogging" by diminishing the overhang. The thickness of the planking, which was now 2½ in. or 3 in., might be reduced to 2 in. if the cappings irons were fastened to the corner plates, so as to make a sort of iron-bound frame. It was believed that a wagon built as suggested would weigh about 3 tons 18 cwts., while the 8-ton wagons now running on the principal railways weighed from 4 tons 8 cwts. to 5 tons 10 cwts.

The second paper read was on "Railway Rolling Stock Capacity, in Relation to the Dead Weight of Vehicles," by Mr. W. A. ADAMS, Asso. Inst. C.E. Forty years ago the travelling carriage accommodating four persons inside, hung on C-springs and resting on a heavy under carriage, weighed upwards of 1½ ton; but the improvements made since then had resulted in the construction of broughams, giving the same accommodation and leg room, and weighing only 6 cwts. 1 qr. When railways were first opened freight vehicles were fitted with buffing and drawing springs, but the types had gradually increased in dead weight, the use of spring buffers had been discontinued in coal and mineral wagons, and the increased dead weight necessitated heavier locomotives, heavier roads, and heavier repairs. In order to have a wagon economical in first cost and in cost of repair, extending over terms of years, the author had departed from the ordinary type of construction, introducing plank bodies, all the soles and headstocks being of sound straight English oak, cross-beams of the same, the diagonals and longitudinals of fir, and the frame held together by longitudinal and cross tie-rods. The floors were of fir, and to increase the rigidity of the frame the floor boards were laid longitudinally, rebatingjon to the headstocks flush with the top of the soles and headstocks, and spiking firmly to the flat diagonals. The frame thus panelled was practically solid. This type tared under 3 tons 5 cwts., the wagons of other builders tared about 3 tons 15 cwts., the difference in weight representing a difference in cost. They were not, however, approved by the railway companies, whose varied and conflicting regulations all tended to enforce greater dead weight.

On the Midland Railway there was a large traffic in beer in barrels, and the 6 ton wagons did not convey more than 3 tons. Most of the wagons worked back empty, so that the Midland Company in their beer trade carried, full and empty, 12 tons 8 cwts. of dead weight for every 3 tons of paying load, receiving payment for less than one-fourth of all they moved. On the Great Western Railway 8 tons of paying load were carried upon wheels and axles weighing 1 ton 8 cwts. 2 qrs.; on the North-Eastern the same load was carried on wheels and axles weighing 1 ton 16 cwts., giving a difference of 7 cwts. 2 qrs. in wheels and axles alone. On the same sidings on the London and North-Western Railway the coal wagons—J. S. Claye (3320) and the Gloucester Wagon Company (6593)—conveyed the one 1 ton 9 cwts. 3 qrs. per ton of dead weight, and the other 2 tons 7 cwts. per ton of dead weight. On the Midland Railway the difference of tare between the present wagons and those built 20 years ago by the author was 16 cwts.; and presuming that 100 wagons each worked, full and empty, 200 miles per week, the company had contracted to convey, free of charge for the life of the wagon, extending probably over 20 years, an excess of 832,000 tons per year for 1 mile. The Orleans Railway of France adopted in all cases a capacity of 10 tons, thereby effecting a large saving in siding and wharfage accommodation. The author was of opinion that the American eight-wheel bogie car was not favourable to a low dead weight, and in practice in nearly all the coal mined in Pennsylvania was conveyed in four-wheeled wagons. The slates wagons on the Festiniog Railway did not usually load beyond 3 to 3½ tons of slate, and the coal wagons beyond 4 to 4½ tons of coal; but the proportion of paying to dead weight was more economical than on any other railway. If 3 tons of paying weight to 1 ton of dead weight could be carried upon so inconvenient a gauge as 2 feet, as good results should be looked for on the 4 feet 8½ in. gauge.

LOAN COLLECTION OF SCIENTIFIC APPARATUS AT SOUTH KENSINGTON.

During the past week the Special Loan Exhibition of Scientific Apparatus, to which the public will have admission on Monday, has been open to those connected with science and education and representatives of the press, and although from its incompleteness the collection was seen to much disadvantage it will evidently prove very useful both to students, teachers, and the public generally. Apparatus is exhibited for demonstrating the modes of action and application of almost every mechanical arrangement, the truths of the hypotheses accepted in connection with the several sciences turned to account for everyday requirements, and the processes by which in scientific investigations reliable results are obtained, so that the exhibits cannot be carefully examined without something useful being learned, and something being done to prevent erroneous notions being contracted. The exhibits are arranged without regard to the country, scientific body, or manufacturer sending them (and this is a vast improvement upon the usual duplex classification) into 18 classes, embracing arithmetic, geometry, measurement, kinematics, molecular physics, sound, light, heat, magnetism, electricity, astronomy, applied mechanics, chemistry, meteorology, geography, geology and mining, mineralogy and crystallography, and biology. In addition to the catalogue a very valuable handbook has been issued, with separate articles, contributed by writers of the highest scientific attainments, upon each of the classes into which the collection is divided. The visit of the Queen and Empress of Germany has been fixed for to-day (Saturday), by which time everything will be in perfect order; and no trouble has been spared to ensure the utmost possible utility for the collection. Among the exhibits of general interest may be mentioned the identical instruments used by Dr. Livingstone in his last journeys, the rude astronomical apparatus fashioned by Galileo, the original air pump—the invention of Guericke, the original model of the Eddystone Lighthouse, Watt's first steam-engines, Stephenson's famous engine "Rocket," which gained a prize of 500*l.* in 1830, and the first steam boiler used in vessels for seagoing purposes.

Messrs. Tisley and Spiller exhibit some ingenious apparatus illustrating the laws of combinations of harmonic motions, and Sir W. Thomson shows a tidal clock and a machine which describes curves predicting the heights of the tides at a given port for all times of the day and night. Prof. Daniel Colladon, of Geneva, exhibits the acoustic apparatus for ascertaining the velocity of the transmission of sound through water, used in 1826 on the Lake of Geneva for a distance of 13,487 metres, and subsequently in 1841 for a distance of 35,000 metres. With this instrument it is possible in calm weather to hear at a distance of more than 100 kilos. the reverberation of blows struck upon a bell of about ¼ ton weight immersed in the water, and thus to use it as a submarine telegraph or to transmit signals in foggy weather. In the mining department the exhibits are both numerous and interesting—anemometers, Guibal's ventilators, mining barometers and thermometers, electric velocimeters, compasses, theodolites, plans, and sections are shown in great variety, and there are goniometers, stauroscopes, &c.; whilst in connection with safety-lamps the Royal Institution show rudiments of apparatus constructed by Sir Humphry Davy during his researches on the Davy lamp, and Mr. G. P. Bidder's magnetic lock for safety-lamps, so that the earliest and latest forms of that useful instrument may be regarded as fairly represented. In the section connected with "heat" a great variety of thermometers is exhibited, among which are some of the earliest instruments. In "electricity" and "magnetism" there is a very large large collection of scientific apparatus and machinery of all kinds. This branch of science is but a half-century in age, but in no section has a greater amount of skill and inventive power been brought to bear. In none have greater results been obtained, and certainly none can equal it in promise of future development. Here we see together the earliest efforts of Nairne, Volta, Babington, and Wollaston, side by side with the powerful machines and batteries of the present day, together with apparatus of wonderful delicacy for measuring and regulating the force of currents, and a fine collection of telegraphing machines from the earliest attempts to the latest and most finished instruments. In the section devoted to "applied mechanics" are some of the early engines—Savary's, Trevithick's, Watt's, Stephenson's, &c.—and some excellent diagrams, so that altogether there is much to attract the visitor's attention.

As many of the visitors are likely to be in ignorance as to the use or value of the majority of the exhibits, the lords of the Committee of Council on Education have had a very complete and highly interesting handbook prepared, by the use of which the visitor may so far read himself up in the several subjects as to be enabled to appreciate the merits of much that he will see. This volume consists of 22 separate treatises written by the best authorities on each of the subjects dealt with; thus Mr. Clements R. Markham has undertaken the section relating to geological instruments and maps, Mr. Norman Lockyer deals with astronomical instruments, Prof. Goodeve with applied mechanics, Prof. Geikie with geology, and Prof. Warington Smyth with apparatus used in mining, the various other sections being prepared by equally good authorities. Upon the whole the exhibition appears likely to prove a great success, and will doubtless be visited by large numbers of persons.

STEAM GENERATORS.—H. S. BARRON, of Greenwich, has patented an invention, which relates to an arrangement of steam generator in which the products of combustion will pass up within a conical fire-box into a chamber or drum at the top of the said fire-box, down tubes from the lower end of said chamber or drum into a lower annular chamber, thence through other tubes, passing through the main body of the generator into an annular smoke box around the steam dome, and away. The tubes that pass through the main body of the generator pass through other tubes which connect the upper and lower parts of the chamber or drum at the top of the fire box, so that annular spaces for the upward passage of liquid and steam in the body of the generator are established between the tubes of the chamber or drum, and the tubes passing up through the main body of the generator. In some cases the lower annular chamber may be dispensed with, U tubes being used. The chamber or drum at top of the fire-box may be made with an annular dip. Its upper part communicates by tubes (provided with plugs) with the annular smoke box. Plates and tubes are provided for promoting

circulation. The generator is arranged so that its main portions may be readily taken apart for examination, &c. In some cases with the improved generators is confined apparatus for heating by means of oil or gas.

THE GREAT CENTENNIAL EXPOSITION.

The mineral, metallurgical, and mining exhibits at the Philadelphia Exposition will certainly be very attractive, and a well-informed writer in the *Railway World* of Philadelphia is already enabled to give an interesting account of the collections from Missouri, Arizona, Mexico, Australia, Cape Breton, Nova Scotia, Westphalia, and elsewhere. With regard to the mineral exhibit of the State of MISSOURI, Mr. G. C. Brodhead, the geologist, states that nearly half of the State is rich in lead, iron, and zinc, and of the 29 counties in which lead is mined 20 have sent collections of ores to the Exhibition. The iron-banks will be well represented. The ores from the mines controlled by Messrs. James, of Moramec, are highly spoken of. There are good specimens from Iron Mountain, Pilot Knob, and Sheppard Mountain, and manganese ore from several places in Iron county, with some from Reynolds. A specimen of magnetic ore from the Iron Mountain will be exhibited, weighing 7500 lbs., and containing about 75 per cent. of metallic iron. Among the iron ores, there are specular from Iron, St. François, Reynolds, Crawford, Dent, Phelps, and Franklin. Besides the above iron ores, there are carboniferous ores of good quality from three localities in Henry county, one in Cedar, one in Vernon, one in Johnson, and one in Linn. There are ochres from various counties. The coal interests of the State are but poorly represented. There are 23,000 square miles of the State underlaid by coal measures, and 8000 to 10,000 of that by beds of workable coal of easy access, and aggregating 24 ft. of coal.

The Legislature of ARIZONA failed to make any appropriation for securing a good exhibit, but the public spirit of her citizens has remedied the omission. Mr. Thos. Ewing, Governor McCormick, and the mineowners generally, have at their own expense made arrangements to secure a suitable representation of her mineral resources. The exhibit will represent 22 different mines, and range in value from $100 to many thousands of dollars per ton. This will be the first general exhibition of Arizona ores ever made in any locality, and will, no doubt, prove of great advantage in bringing to the knowledge of the world some practical idea of the immensely valuable mineral resources of that region. Amongst the exhibits from MEXICO is a very fine collection of minerals from the principal mining districts. There is a fragment of quartz, 1300 lbs. in weight, containing a large quantity of bromide of silver; large masses of galena from Zimapan, a large collection of Mexican marbles, generally known as Mexican onyx; a mass of iron ore, weighing 75 lbs., from the celebrated iron mountain, or Cerro del Mercado, near the city of Durango; samples of coal from various localities, and numerous other mineral specimens.

The mineral products of the British colonies are admirably represented. The contributions from AUSTRALIA are very numerous and wonderful. The exhibition of the resources and mineral wealth of that distant colony is very creditable, and will excite great admiration. It is to be regretted that the Commissioner, Mr. Angus McKay, could not be accommodated with more space for his exhibition. To show the goods advantageously trophies have been built upwards of tin, copper, gold, antimony, wool, sugar, timber, and all the products of the colony. Next the centre is a large obelisk, 22 ft. 9 in. in height, 3 ft. 3 in. at the base, and 18 in. at the apex, which is intended the show the gold which has been taken out of Queensland since the precious metal was discovered in 1868, at Gympie, in the central districts. The obelisk will be covered with gold, burnished, and represents a mass of gold 60 tons in weight, which has netted to the colonies 7,000,000*l.* sterling. The gilding will be so arranged as to show the relative proportions taken out of the mines each year. Around the base of the column will be rich specimens of gold quartz. Close to this obelisk, on the south side, there will be erected, owing to lack of space for side display, a pyramid of Australian tin in ingots 12 ft. in height, and weighing 7 tons; the ingots are 80 lbs. weight each, 18 in. by 3 in.

A model showing the tin-bearing strata will be exhibited, and masses of copper weighing about 7 tons are placed in stacks. The rocks and soils of Queensland will be shown, with a variety of specimens of mica, hornblende, and building stones. A trophy of coal from the bituminous fields of the province, about 25 ft. high, arranged in pyramidal form, will show blocks of coal 18 in. square from the mining districts—Hunter River coal fields, Western, Southern, and New Castle. From the Hunter River district there are blocks from the collieries at Anvil Creek, Greta, Stony Creek, and Red Creek; from the Western coal is sent by the collieries at Bowenfells, Lithgow Valley, Eskbank, Vale of Chwydd, Blackman's Flat, Wallerawang, and New South Wales, Shale county. In the Newcastle district contributions come from Waratah, Lambton, New Lambton, Newcastle, Mimni, Duckenfield, Cardiff, Dudley, Woodford, and elsewhere, as well as Bulli, Osborne, Mount Pleasant, and Brereton and Robinson in the Southern field. A number of specimens of coal from NOVA SCOTIA are exhibited, and among the minerals sent there is a specimen of lead ore which shows that the mineral has infiltrated the tissue of some reed-like plant of the carboniferous age; it is from the surface soil near Arisaig Pier. No pieces have been found *in situ*. Two pieces of quartz, weighing respectively 20 and 35 ozs., and valued at $1100, recently obtained from a Nova Scotian gold mine, are exhibited in the Canadian mineral department. CAPE BRETON makes an excellent show. The Hon. J. McKinnon shows iron ores from Whycocomagh; H. Fletcher, of Geological Survey, hematite, Block House Mine, column of coal 9½ ft.; Big Glace Bay, column of coal 7 ft.; Little Glace Bay, column of coal 6½ ft.; International, column of coal 6 ft.; Lingan, column of coal 5½ ft.; Caledonia Mine, column of coal; Victoria Mine, block of coal; Ontario Mine, block of coal; Gardner Mine, block of coal; Cape Breton Mine, block of coal; Gowrie Mine, block of coal; New Campbellton, block of coal; J. Silver, marble from Marble Mountain; C. J. Campbell, syenite and marble from Campbellton; J. McQuarrie, syenite, marble, sandstone, and limestone from George's river; C. J. Campbell, limestone; J. McQuarrie, limestone, raw and burned; C. J. Campbell, fire-clays.

The mineral exhibit of MONTANA comprises, among other things, a number of specimens of lode and placer tin, and metal produced from the ore. The specimens are the contribution of Mr. H. M. Hill, of Clancy, Jefferson county. They are described as specimens from a mineral property that promises at some day to become exceedingly valuable. It is affirmed that several mining districts in Montana contain tin ores ores in considerable quantity, but whether to an extent sufficient for profitable working remains yet to be shown. The zinc and iron companies of the LEHIGH VALLEY, some 26 in number, will make a display of their products. The exhibit will consist of iron ores, slags, fluxes, pig-iron, manufactured iron, steel, steel rails, and rolled iron and steel. There are now on the space two monster specimens of zinc ore, one of them weighing 3300 lbs., which will yield about 50 per cent. of zinc; the other weighing 5400 lbs., and believed to contain 48 per cent. An enormous anvil is exhibited from NEW JERSEY, Messrs. Fisher and Norris, of the Eagle Anvil Works, Trenton, having just turned out the largest blacksmith's anvil in the world. The cast-steel face is 5 ft. in length, including the horn, and 8 in. in width; it is welded in one piece to the body of the anvil. It weighs 1380 lbs., and forms part of the firm's Centennial exhibit at Philadelphia. It is especially interesting from the fact that so large a piece of steel has never been welded to iron before, either in the United States or Europe. A chime of 13 bells, representing the old 13 States, has been completed by Henry McShane and Brothers, of Washington, for exhibition at the Centennial. They are being placed in the north-eastern tower of Machinery Hall. They weigh 21,000 lbs., the largest weighing 3600 lbs., and the smallest 350 lbs. Their value is $12,000. Three times during each day—sunrise, noon, and sunset—their music will enliven the Centennial grounds. Prof. Widdows, who will operate on the bells at the Exhibition, claims that the chime is the most harmonious in America.

Those interested in COAL AND COAL CUTTING MACHINERY will find plenty to attract attention. In Machinery Hall a coal breaker of enormous size from Belgium has been placed in position. The Dickson Manufacturing Company, of Scranton, have a large amount of mining machinery, including a pair of hoisting engines, operated on the link principle, and a Cornish pumping-engine, which is calculated to pump a column of water 20 in. diameter from a depth of 400 ft. Allison and Bannan, of Port Carbon, are erecting an improved air compressing engine, designed to drive machinery when it is not practicable to use steam. These machines are, it is claimed, a great improvement over machinery driven by steam in the coal mines. A beautiful model of the coal breaker lately erected at Drifton, by Messrs. Coxe Brothers, is exhibited by them, and shows in detail every feature connected with the preparation of coal from the time it is taken from the mine until it is loaded in the cars ready for market. An obelisk of coal from the anthracite regions of the State is displayed in the Smithsonian Institute department. It is 40 ft. in height, composed of blocks, some of which are 4 ft. long and 3 ft. square at the end. The Kittaning Coal Company send two blocks, the smaller of which weighs a little over 2½ tons, and the larger about 5 tons. The Maryland Company send two large shafts from the Cumberland region. The Raymond Coal Company, of Putnam County, West Virginia, send a block of coal weighing 7000 pounds. The coal of Tennessee is represented by a mammoth section, prepared under the auspices of Gen. J. B. Wilder. The Virginia Coal Company, near Piedmont, send a section of coal seam 14 ft. high, with but 4 in. of impurities. The Philadelphia and Reading Railroad Company have nearly finished a complete cross section of the mammoth coal vein, in the Schuylkill region. The coal is from the Plank Ridge shaft, and consists of a shaft 3 ft. square, and the full thickness of the vein, showing the intervening slates and all the different benches. The same company exhibit a block of anthracite coal from the Knickerbocker Colliery; it is taken from the bottom bench of the mammoth vein, and measures 5 ft. in breadth, 5½ ft. in height, and 8½ ft. in length, weighing about 20,000 lbs.

The display in the MACHINERY DEPARTMENT is admirable. At a recent meeting of the Park Commissioners they had under consideration a proposition from a number of practical railroad builders to construct a railway in Fairmount Park, from Girard avenue bridge to Chamouni. They propose to operate it as a gravity railway. The line would be about four miles in length, and the projectors guarantee to finish the work in two months after the right of way is granted, so that prompt action would make the line available to visitors to the Exposition after July 4 next. We do not know what decision the Park Commission will arrive at, but if it should happen to be favourable the Exposition grounds and the region immediately adjacent will furnish one of the most complete exhibitions of diverse railway systems in practical operation that could be devised in the daily workings of the Pennsylvania, Philadelphia, and Reading Junction, and West End Narrow-gauge, the city passenger roads, and the proposed new gravity road. The transportation and unloading of exhibits by the PENNSYLVANIA RAILROAD COMPANY has given great satisfaction, and afford a wonderful illustration of the working capacity of a great railway organisation. These labours include the unloading from foreign steamships of exhibits of the most formidable proportions, their transportation from the water's edge in cars to the Centennial buildings, and unloading them at points near the spaces assigned. The unwieldy nature of some of the packages to be transported will be best understood by the statement that they have embraced a package of French looking glasses, about 28 by 15 ft. in dimensions, without the frames, and as it was necessary to handle them with great care to send them through a comparatively narrow tunnel, and to prevent the car containing them from coming in contact with moving trains, their safe delivery was no small triumph.

The SWEDISH DEPARTMENT contains a novel locomotive, exhibited by Mr. Harald Asplund, and manufactured at Kristinehamn's Works. To obtain increased space for the boiler and fire-box, there is arranged in front and adjacent to the fire-box a transverse plate, which will operate a connection between the foremost frame-plates, running longitudinally inside of the drag wheels and aft-plates, which are lying outside of the leader-wheels. With the view of utilising the increased engine-power thus obtained, without increasing the pressure on the wheel and rails, the weight of the locomotive is spread over several coupled wheels, placed as close to one another as possible, in order to prevent the locomotive from wrenching and cranking at curves with comparatively short radii. The constructor has further had in view, by adapting so-called radial axle-boxes, of his own invention, on the foremost or aftmost axle of the leader-wheels, entirely to counteract the consequences of the increased distance between the axles, produced by the adaptation of these wheels—that is to say, prevent the aforesaid wrenching and cranking consequent thereon at curves with short radii. These radial axle-boxes are acting in such a manner that the axle on which they rest at any curve, and whatever be its radius, takes the exact direction of that radius, producing at the same time the side motion that is requisite to prevent the wrenching. The radial axle-boxes will, morever, become self-acting from the circumstance that the underside of the steer-block, lying on the rollers, is provided at both ends with a downward bend. When the wheel-axle with its radial boxes is forced at a curve to move sideways, and consequently must work against the inclined planes at the extremities of the steer-block, then the axles and their boxes are forced back by the same inclined planes, and will resume their former position at the same moment that the side pressure at the end of the curve ceases. By this means the wheel-axle will always remain parallel with the other axles when the locomotive goes on a straight road; but will commence sliding sidewise whenever the locomotive enters a curve. The Baldwin Locomotive Works exhibit six engines, exclusive of the two engines to be employed in active service by the West End Narrow-Gauge Railway on the Centennial grounds. Two will be for the Pennsylvania Railroad Company, one for service in Brazil, and the others for the use of leading American railways. Porter, Bell, and Co. have in Machinery Hall a very handsomely-finished narrow-gauge passenger locomotive. The decorations are in Centennial style, with a liberal infusion of stars, flags, 1876, &c., and present a very handsome appearance. The engine and tender made in the shops of the Philadelphia and Reading Railroad Company are in Machinery Hall, presenting a very attractive appearance. The Danforth Locomotive and Machine Company make an imposing and attractive exhibit of Vulcan, a very large engine and tender, and another smaller engine. The Baltimore and Ohio Railroad Company exhibit the Grasshopper, one of the oldest engines in the United States, side by side with the last passenger engine made by the company. The Dickson Manufacturing Company have some excellent engines and models.

In connection with RAILWAY APPLIANCES it should be mentioned that the Swedish department contains a number of car wheels, the central portions of which are of wrought-iron, and the tyres of Bessemer steel. A number of cast-iron wheels are also exhibited, as well as fractured portions of the iron, which seem to possess great strength. The Ramapo Wheel Company send a collection embracing the following comprehensive features—A series of truck wheels of all the sizes that are used in the United States, from 24 to 42 inches, in one group. The standard wheels and axles as adopted by the master car builders of the United States. The standard horse-car wheels of this country. A new pattern of truck wheel, now exhibited for the first time, with hollow hub and tread and solid spoke. The standard metre-gauge wheel of this and all other countries. Samples of Richmond and Salisbury ores and pig-iron, and sections of wheels which have had their strength and density tested by the United States Government. A set of wheels which have run a long distance under Pullman palace cars. A truck wheel that has been under a Mogul engine of 40 tons for four years. A patent self-lubricating car wheel is exhibited by Messrs. Geo. B. Bryant. The wheels are strongly commended by a number of persons who have used them in the anthracite coal regions of Pennsylvania, and by officers connected with the coal department of the Delaware, Lackawanna, and Western Railroad Company. The inventor claims that his car wheels "require to be filled but once in from three to eight months, according to the size and use of them. There is no wasting of oil—1 pint of oil to each wheel will last 100 days, while the cars are in constant use. On the old style of axles and wheels the average quantity of oil used is 1 pint to each car per day. When the wheels are not running the oil ceases to flow, but immediately on starting the wheels the oil feeds into the axle in just sufficient quantity to act as a perfect lubricant." The Utica Steam Gauge Company, of Utica, New York, make a handsome and effective display of some of their manufactures, including four sizes of locomotive gauges, three full sets of instruments for marine engines and locomotive clocks. They also exhibit a beautiful apparatus for testing steam gauges by direct weight, which illustrates the operations of a gauge they manufacture for the use of locomotive shops. We understand that their exhibit will also embrace an electric counter, which will indicate the revolutions of the huge Corliss engine, located about 1000 feet distant from the space they occupy.

Amongst the STEEL exhibits, perhaps, the most attractive is that of the Chrome Steel Company, consisting of a number of handsome specimens of their chrome steel, which seems to be fast gaining in favour with those who are building, or contemplate building, structures which require light weight combined with unusual strength. The word "chrome" is not, as many suppose, merely a trade mark, but an adaptation from the word *chromium*, the name of a metal, the nature of which can best be stated by making extracts from the report of Capt. James B. Eads, engineer-in-chief of the Illinois and St. Louis Bridge Company. He writes—"Chromium unites with iron and forms an alloy similar in its properties to steel; it is quite different from carbon in some important particulars, and is a metal, while carbon is not; it has little or no affinity for oxygen, and is not affected by excessive heat, while carbon has a great affinity for it, and by the application of heat is liable to be burnt out of the steel." In the making of other steels carbon is used. The major claims advanced for this "chrome" steel are a superiority of strength and a perfect uniformity, but other advantages are also claimed. Five distinct grades are made. The more chromium used the stronger and harder the steel. Another interesting exhibit is that of the Edgar Thomson Steelworks, consisting of six monster rails. The largest is 120 ft. 2½ in. long, and weighs 62 lbs. to the yard, or over 21½ cwts. in all; the second is a similar rail, 98 ft. 1 in. nearly, and the third 81 ft. 5 in. The fourth is of heavier section, being 67 lbs. to the yard, and 62 ft. 2½ in. long; and the fifth is a 60 ft. rail of 60 lbs. section. But by far the most attractive is the rail which surmounts the pyramid, as this has been twisted into a monster corkscrew, to show the character of the metal The whole six are simply perfect.

Messrs. Vose, Dinsmore, and Co., of Barclay-street, New York, exhibit specimen of volute buffer springs; Dinsmore nest spiral springs for buffer and bearing purposes; nest spiral springs (another pattern); spiral cluster springs, in groups, with seat castings; indiarubber springs; round bar nest-springs; small rubber-centre spiral springs, grouped, and enclosed in box castings; large rubber-centre spiral springs; compound steel and rubber spiral springs; enlarged rubber-centre spiral springs, with seat castings; elliptic steel springs (ordinary pattern) for railway purposes; Cliff's elliptic springs for passenger and freight cars; combination elliptic springs for passenger and freight cars. Amongst the miscellaneous exhibits may be noticed those of the Midvale Steelworks, and Messrs. Allison and Sons, which occupy a prominent position in the Machinery Hall. One of the novelties in the building is an arrangement of gas burners for heating tyres of all descriptions, which has been successfully applied to railway as well as carriage shops. It is exhibited by S. G. Reed, of Wellesley, Massachusetts. The large magnets produced by Messrs. Wallace and Sons, of Ansonia, Connecticut, will be well represented. This firm occasionally astonish railway passengers by producing a magnet capable of lifting a locomotive from the track. The last one made had a lifting capacity of 30,000 lbs.; and one is now in process of construction, an electro-magnet, which will surpass all the preceding ones, will find a place in the building.

The NEW SOUTH WALES exhibits are elucidated by an admirable series of statistics, and notes on the geological collection of the Department of Mines, compiled by direction of the Hon. John Lucas, M.P., the Minister of Mines, to whom we are indebted for a copy, and the volume also embodies some interesting remarks on the sedimentary formations of New South Wales, by the Rev. W. B. Clarke, and notes on the iron and coal deposits, Wallerawang, and on the diamond fields, by Prof. Liversidge, of Sydney University. The exhibits and the accompanying volume will cause the vast resources of the province of New South Wales to be recognised even more thoroughly than they are already, and the Minister of Mines, as well as Mr. Clarke and Prof. Liversidge, have certainly entitled themselves to the best thanks not only of the people of New South Wales, but of the entire empire, for their efforts to promote the increased development of the important mineral region which they represent.

THE CORNWALL CHEMICAL COMPANY—No. VI.

[*Continued from page 491.*]

There is yet another shape in which arsenic is sent into the market. We have explained that it is a substance volatilisable at a moderately high temperature, and that the vapours upon being cooled condense into a crystalline sublimate or soot. If, however, the condensation take place at a temperature but little short of that required for volatilisation, the sublimate is rendered amorphous, and, assuming a fused condition, as it were, forms a kind of glassy deposit on the walls of the condenser. In this state it is termed lump arsenic, or arsenic glass, and although identically the same substance, chemically speaking, is used for some purposes in preference to the ordinary white powdered arsenic. Accordingly, no arsenic manufacturer's premises would be complete without some provision for the production of arsenic glass, and this we find existing at the works of the Cornwall Chemical Company.

In our description of the upper portion of the factory we mentioned two ranges of buildings in the rear of the brick department. It is here that the manufacture of arsenic glass is carried on. In one of the buildings, similar in its construction to the furnace-house where the mundic is burnt, we find a large structure erected consisting of a mass of brickwork, in the lower portion of which are three fire-places, with ash-pits, &c., while at the top are three cast-iron pots, so set as to be heated by the fires underneath. These pots are each surmounted by a cylinder of cast-iron, open at both ends, one of which by means of a flange is screwed upon the pot while the other is similarly affixed to a cap shaped like an inverted funnel, and affording a vent into a horizontal iron pipe suspended from the roof, and communicating with the main flue outside the building. A running block and tackle are fitted up above the pots for the purpose of lifting off and replacing the cylinders whenever desired. The process of manufacture is of a very simple character, although requiring considerable care. A charge of white powdered arsenic is placed in the pot, and the cylinder and cap are fastened on as securely as possible so as to prevent the escape of any poisonous vapours. The fire is then urged for some hours, until at length the whole of the arsenic is expelled from the pot, and the heated vapours accumulate in the cylinder and cap, where they very gradually cool into a glassy mass on the sides of those vessels. So soon as this is effected the fire is extinguished, and when the apparatus has become cool enough to open without danger, the block and tackle are called into requisition, and by their aid the cylinder is removed from the pot and cap, and is carried into an adjoining building. Here the thick lining of arsenic glass, with which it is nearly filled, is removed in pieces as large as possible. On the side nearest the iron, and occasionally on the other side as well, the glass is found to be coated with a dense crystalline deposit of ordinary arsenic. This is carefully cut and scraped off by knives at a table fitted with drawers underneath, into which the scrapings can be brushed through little trap-doors made for the purpose, and as often as the drawers become full the contents are sent to the pots again. When thus cleaned the glass is packed in kegs holding 1 cwt. each, and lined with blue paper, and is then sent into the warehouse to await dispatch. It has at first all the appearance of ordinary glass, except that it is not so transparent, and is of course in irregular fragments; but after being kept for some time it gradually becomes diaphanous and milk-white in colour, and then perfectly opaque, until it resembles so many masses of porcelain. Its chief advantages over arsenic in powder are that it is transportable with less danger, and that owing to its amorphous condition it is three times as soluble.

Before leaving the subject of arsenic it may be as well to say a word as to its uses. When we learn that the yearly production

amounts to about 7000 tons, it naturally occurs to us to ask in what manner such a large quantity can possibly be employed, especially when we bear in mind its poisonous properties, of so deadly a character that a single year's production would be more than sufficient to destroy 36,586 millions of human beings, or, in other words, vastly more than enough to kill every living creature, whether man, beast, fowl, fish, or insect at this moment existing on the surface of the whole earth. A dose of from 2½ to 3 grains will in most cases produce death, and as, moreover, it is almost tasteless, arsenic has always formed an efficient and favourite agent in the hands of the poisoner. The celebrated Aqua Tofano of the Borgias is thought to have been a skilfully prepared solution of arsenic, and at the present day the Chinese name for arsenic is, when literally translated, "the trusty friend," a title of sufficiently grim significance. Fortunately, though, the researches of modern chemistry have shown arsenic to be one of the most easily and certainly determinable of poisons, it being possible to distinguish with accuracy the one-hundred-thousandth part of a grain. In itself arsenic is not readily soluble, and when brought into contact with animal matter it forms solid compounds of great permanence. Hence it acts as a preservative against putrefaction, and may be found in a body many years after death.

The physiological actions of arsenic cause it to be employed to a considerable extent in medicine for the cure of skin diseases, nervous disorders, chorea, ague, rheumatism, &c.; and it is largely used for the destruction of vermin, sheep-dipping, the preservation of skins and furs from moths and insects, and the prevention of smut in wheat. For these purposes, however, the quantity employed is necessarily small, and it is in the arts that the chief consumption takes place. The well-known emerald, or Schweinfurt green, is a pigment compounded of copper, acetic acid, and arsenic; and with Scheele's green, composed of copper and arsenic alone, is prepared on a very extensive scale. Realgar, a red pigment (used also in the composition of White Indian fire), and orpiment, or king's yellow, are both compounds of arsenic with sulphur, and are largely used for decorative purposes, the latter being also employed in dyeing to reduce indigo, and as a depilatory ("rusma") in the preparation of hides for tanning. In its metallic state arsenic is used to mix with lead for the manufacture of shot, the alloy being much harder, and its particles more capable of spherical aggregation than lead alone; while another use for metallic arsenic is in the composition of signal lights, or it may be made to burn with a white flame of intense brilliancy. In most glassworks, and especially where flint glass is manufactured, a considerable quantity of arsenic is consumed for the purpose of peroxidising any iron that may be present, and that otherwise would communicate a green tinge to the glass. Arsenic also enters into the composition of most enamels, and what is termed opal glass. In combination with soda and potash arsenic is very largely used in dyeing and bleaching operations, and as arsenic acid it has to a great extent replaced tartaric acid for the white discharge of Turkey red in calico printing. Perhaps, though, the most important application of arsenic is (as arsenic acid) in the manufacture of rosaniline, the base of most of the coal-tar colours, such as magenta, opal blue, Humboldt blue, serge blue, Bismarck brown, Paris green, phosphine, &c., for which purpose it is not an exceptional case to find upwards of 500 tons of arsenic consumed annually in a single establishment. Altogether, therefore, arsenic may be regarded as a substance of wide and extensive application, and it appears probable that its uses will multiply still further in accordance with the fast-increasing requirements of chemical industry.

We have now to return to the ore, and to ascertain what becomes of its other constituents. We saw that in the roasting furnace when the arsenic was expelled it was accompanied by the sulphur, which having taken fire and united with the oxygen of the atmosphere flowed off into the flue in the shape of a gas. This gas, unlike the vapour of arsenic, permanently retains a gaseous condition, and eventually makes its escape from the top of the main chimney stack to mingle with the atmosphere, and there remain until carried down to earth by rain or dew. Its chemical name is sulphurous anhydride, and when combined with water it forms sulphurous acid, a body having a powerful corrosive action upon vegetation, as is strikingly exemplified in the neighbourhood of Swansea, where the calcination of copper pyrites (the double sulphide of copper and iron) causes perpetual volumes of sulphurous acid to form in the atmosphere, with the result of destroying every vestige of herbage for miles around. This is the reason of the chimney-stack of the works we are describing having assumed such gigantic proportions, so that the noxious gas may be discharged into the air at a height sufficient to ensure the dilution of the acid to an altogether harmless condition.

As yet this gas is of considerable commercial value, being, in fact, the first stage in the production of vitriol or sulphuric acid, a substance of primary necessity in all branches of manufacturing chemistry, and of which the consumption and uses are extending year by year. Over 500,000 tons of pyrites alone are annually imported into this country for the purpose of calcination in order to burn off the sulphur, and thus obtain a supply of sulphurous anhydride for subsequent conversion into sulphuric acid. It is, therefore, plainly evident that where sulphurous anhydride is constantly evolved as a waste product it may be profitably turned to account, provided that on the one hand the quantity be sufficient to warrant the erection of the necessary vitriol plant, and on the other that such plant can be erected without inconvenience to the existing works. Neither of these objections is present in the case of the Cornwall Chemical Company. Their mundic furnaces, when at full work, are capable of calcining 700 tons per month of ore, which, in addition to its other elements, contains about 10 per cent. of sulphur. The combustion of 70 tons of sulphur will produce 350 tons of sulphuric acid in the degree of concentration known as chamber acid, so that it will be seen each ton of mundic burnt might be made to yield ¼ ton of commercial sulphuric acid, worth about 1*l.* 15*s.* It may fairly, therefore, be said that something like 1*l.* profit escapes up the chimney for every ton of mundic that is burnt in the absence of the proper plant to intercept it. This on a treatment of 700 tons monthly means the possibility of adding upwards of 8000*l.* per annum to the profits of the company, and we are glad to say that the point has not been lost sight of by the managers either in London or at the works. The materials are already on the ground for the erection of the requisite buildings and apparatus, and in the course of the ensuing summer we hope to record the successful inauguration of this addition to the industries of Cornwall.

(To be continued.)

FUEL.—Mr. LAKE (for Mr. MCPHERSON, of Washington) proposes to convert pitch or asphaltum into a true asphalt by the addition of calcareous earth. He first mixes coal dust with asphalt to about the consistency of concrete. He then mixes clay with hot water until the whole assumes a pasty mass. This pasty mass in its hot condition is then thoroughly mixed with the asphalt.

STEAM PUMPS AND AIR COMPRESSORS.—The invention of Messrs. COPE and MAXWELL, of Hamilton, Ohio, consists in giving the steam valve or valves a combined longitudinal and transverse motion for regulating the supply and pressure of steam to direct acting pumping engines, for regulating or governing the motion of the piston to the required speed. Also valves for regulating the discharge of water from the cataract cylinders used for regulating the motion of the main steam valve. Also in the manner of constructing and arranging steam-moved valves and working the same for reducing the motion of the pistons of the engine and pump to prevent the pump valve from knocking when the motions of the pistons are reversed. Also in the manner of arranging and constructing a series of air compressing cylinders in the same machine, by which the air is compressed to the required pressure before it is discharged from the machine. Also in the construction and arrangement of the valves of pumps and vacuum chambers therewith, and supplying the air chamber with air by a system of valves worked by the main piston of the pump, and manner of working a pump piston of two areas, and arranging the suction and delivery valves therewith for convenience in construction and repairs.

SPEED INDICATORS.—The invention of Mr. S. B. Weir, of Shepherd's Bush, consists in the employment of a reciprocating air pump driven by the object of which the speed is to be indicated, and which forces air to the indicating apparatus, the peculiar feature of the said pump being that the piston and valves are not made air tight, by which means wear and tear is prevented and the excessive accumulation of air tending to give rese to incorrect indications is avoided. A regulator or accumulator consisting of a flexible bag or bellows, or of a rigid chamber with adjustable inlet and outlet, is employed in connection with the tube leading from the pump to the indicator instrument for the purpose of regulating the pressure of air and adjusting the indicator to indicate the exact speed of the moving object. The indicating pointer is operated by flexible bellows expanded more or less by the compressed air from the pump. When it is required to indicate the direction of motion of the moving object two bellows are required at the indicator, one turning the pointer one way for one direction of motion, and the other turning the pointer the other way for the reverse direction. For very high speeds a regulating valve is employed in connection with the indicating bellows to allow the escape of a portion of the air to prevent the bursting thereof. The indication may be regis tered graphically on a sheet of paper or card.

MINING AND STOCK EXCHANGE NEWS OF THE WEEK.

Messrs. F. W. MANSELL and Co. (Sworn Stock and Share Brokers), Pinner's Hall, Old Broad-street, write to us as follows:—

I. X. L. (Gold and Silver)—THE COMSTOCK MINES (No. VI.)—"Why," we are asked, "has not the I.X.L. as well as the Exchequer Mines not long since been placed in a similarly profit yielding condition to the Consolidated Virginia and other Comstock Mines?" We are told that in each material respect the mines in Silver Mountain are analogous to those on Mount Davidson, that the country rock is identical, with similar clay selvages and quartz matrix; and Mr. Lewis Chalmers, the respected manager, believes the I.X L. Mine at the 200 ft. level, when it reaches the perpendicular of the bonanza in the upper level, will prove very rich, although the Consolidated Virginia was not very rich until a depth of 1000 ft. had been reached, ascribable to a certain extent probably to the fact that being on the main range the volcanic action of both I.X.L. and Exchequer was more regular and less disturbed than in the neighbourhood of the Consolidated Virginia, on a spur of the range subsequently dislocated, it may be, by a slide. A question we are asked is, How is it with such attested facts staring investors in the face that mines possessed of every mineralogical, geological, and physical feature essential to the ensurement of a grand success have not long before now been developed upon a scale and with a vigour fully justified by their admitted merits and capabilities? Our reply to this very natural and pointed inquiry would be that only within the last few years has the Comstock lode itself been developed, indeed, we can quite recollect the late Mr. Donald Davidson describing the hill, which now bears his name, as one that should be prospected; the Comstock Mines, of which the Consolidated Virginia is the most prominent, avowedly "the richest mine in the world," stand out as witnesses of the presience of the earliest prospector and locator, but Mr. Davidson was also the earliest prospector and locator of I.X.L. The other answer, and we venture to think a conclusively satisfactory one to the above enquiry, is not ours, but that of Prof. Rossiter W. Raymond, United States Commissioner of Mining Statistics. In his report to Congress the Professor says: "Up to a recent period the mines on Silver Mountain have been mostly owned by poor miners and others who, unable or unwilling to work themselves, have steadily refused to sell unless at highly exaggerated, in fact ridiculous, prices. Tired of playing this part they at last offered inducements to Eastern and English capitalists, who found the mines totally undeveloped; this will account for the time which has elapsed since the discovery of the mines without the achievement of satisfactory results." Before the bonanza had been met with in the Consolidated Virginia the stock was almost unsaleable on the San Francisco stock board. A bonanza was then unthought of, and a little donkey-engine, scarcely larger than those used by thrashing machines, did the whole hoisting of the mine, When the Consolidated Virginia Company took the work in hand they continued the shaft and enlarged it, ran drifts north and south, put up rises, sunk winzes, drove cross-cuts in every portion of the ore vein, and continued until they found the big bonanza, which last year yielded a net profit of 2,500,000*l.* upon a capital of 100,000*l.* We have thus traced the earlier history of the Consolidated Virginia as it assimilates to that of the I.X.L. Mine. In further proof of this it may be mentioned that believing much of the waste rock thrown away by former owners as too poor to work when an expensive reverbatory roasting was a *sine qua non*, would pay if crushed wet and amalgamated with blue stone and salt without roasting, Mr. Chalmers sent 49 tons taken from the waste dumps to a neighbouring mill to be treated in this way, and although the customary charge for milling ($15 per ton) ran away with the profit, the fact was established to the manager's own satisfaction that there is no difficulty in obtaining from the ore a fair percentage without roasting, and that even $20 ore will pay a good profit in the company's own mill. The 49 tons took just three days to work, part of which time was consumed in hand-breaking the ore, which was mostly in large lumps and excessively hard. The mill expenses did not amount to $100 per day—say, $6 per ton. The bullion produced sold for $465 at San Francisco Mint, so that there was an actual profit on this small batch of over $164, besides the tailings. The Express lode has turned out to be a cross lode, running north of east and south of west. What effect this may have on the intersected lodes cannot yet be positively stated, the opening having been driven only 25 ft. on the main lode since getting through the cross lode, and not yet having reached its junction with the Ophir, south. Quartz with ruby silver has made its appearance in the 200 feet level, and Prof. Raymond says that it assays fairly high, while every day brings nearer the rich bonanza which at a depth of only 50 ft. from the grass roots gave its original proprietors $50,000 from a few feet of lode. The south drift is in broken up vein matter, caused, no doubt, by the close proximity of the Ophir, which will be cut within 20 ft. of the present face, or about 44 ft. from the cross-cut. The company has an excellent mill site, ample water power for a steam mill of any capacity, timber in abundance; in fact, everything required for an efficient and economical working of both mine and mill. Those persons who believe that the extraordinary production of silver will soon cause a depreciation in the value of that metal need not be anxious to magnify that threatened evil. Though the increase is sure to be large in time to come, there will always be a corrective measure put in operation, as the lowering of the price of silver brings a demand for it from other parts of the world. If speculators take advantage for a time of a local plethoria their power to do injury will be of short duration. The aggregate gold product of the Pacific Coast is still much greater than that of its silver, being in fact 56 per cent. more. The average yield of the Consolidated Virginia ore in 1875 was nearly $100 per ton, but of this 40 to 45 per cent. was gold. The Comstock lode ought to be quite as celebrated for its auriferous wealth as for its argentiferous treasures. Where in any zone of the earth, save at the base of Mount Davidson, has there been a gold quartz lode which has yielded in a single year 170,000 tons of ore, worth $42 per ton in pure gold? The Consolidated Virginia Mine did that wonderful thing in the year 1875, and supplemented the product by $57 in silver per ton of ore worked. In 1875 the silver State of Nevada produced more gold than the golden State of California by $242,084, and more than all the other Pacific States and Territories combined by $1,922,454. In its future yield of gold, as well as silver, Nevada will certainly remain unapproachable. Its yield now is at the rate of 1,000,000 per annum for every man, woman, and child within its limits, though the actual miners number only a few thousands. One thing we desire to point out to those who are now investing in I.X.L. shares, and we cannot better illustrate it than by an axiom current in military circles. If a general can throw a sufficient force upon any objective point which he desires to carry, he succeeds in doing so; if, on the other hand, he is only able to move up battalions to attack the position he desires to occupy, half his men are cut to pieces before the attempt is successful. Had the Exchequer Company obtained three years ago all the capital since expended upon the mine and the mill, there is no doubt in the minds of those best acquainted with the undertaking that the company would have paid dividends within six months thereafter; but the capital, as is well known, was subscribed, as it was absolutely required by the directors and a few of their friends, who are now also shareholders; consequently, much time has been lost, as well as money. Now we have to point out that the unallotted shares in the I.X.L. Company, which amounted to 40,000, have all been subscribed for, and the directors are thereby enabled to carry out this undertaking under far more encouraging auspices than attended the Exchequer Company three years ago—in other words, a sufficient force is ready to be thrown forward to secure a brilliant success, which means continuously large dividends within a very short period.

EXCHEQUER (Gold and Silver)—No. V.—Recent shareholders seem altogether unacquainted with the earlier history of their undertaking. The Silver Mountain district, in which the mine is situated, contains the county seat, and is topographically the highest of the mining camps, the town of Silver Mountain being 7000 ft. above sea level. The Exchequer Mine is situated at the head of Scandinavian canyon, about two miles north of the town, 1380 ft. above the level of the main street; the company has been at work since February, 1870, when it purchased the then undeveloped Buckeye No. 2 and Accacia Mines. Some very rich ore was soon raised. As we have hitherto pointed out, the country is an eruptive porphyry, changing in places to clinkstone or phonolite; the lode is strong, beautifully cased with clay selvages between high polished walls. The ore is an antimonial sulphide (ruby silver both light and dark), mixed occasionally with silver glance and the black sulphuret, matrix quartz. About 200 feet from the mouth of the main tunnel, in a cross-cut to the hanging wall, and 25 ft. from the foot-wall, a vein was struck of pure white gold-bearing quartz, interlaid with veins of sulphurets, a piece of which yielded $2542 in gold and $5·16 silver=$2547 (500*l.*) per ton. The drop in Exchequer shares is another proof how little the British public understand the nature of mining investments. Because a couple of old reverberatories, which had not been used for years, have been tried tentatively, and found inefficient, it is immediately supposed that the result was disappointing. Now, it ought to be very well understood that the manager never had any intention to use these longer; that the weather prevented his putting up proper furnaces; he has now decided to erect O'Hara's furnaces, capable of roasting 25 tons per day. This will enable him to keep that part of the system of reduction up to the power of the stamps, when the new battery shall have been erected; consequently, the present fall in the price of the shares can have no reference whatever to the value of the mines or the profits realised when the mill is really in working order. In fact, the recent trial would never have been made if the manager had not been anxious to try some experiments with the means at his command with reference to the future successful reduction of the ores, but he has not been able to continue these in consequence of the reverberatories having got out of repair. The present declining price, however, offers very good opportunities for those unable before to purchase the shares below their value. We may add that the lode in the 200 feet level is 44 feet wide from wall to wall—all lodestuff.

BLUE TENT CONSOLIDATED HYDRAULIC (Gold).—At the date of the last advices the aqueduct was open three-fourths of its entire length, and water flowing through it. The manager (Prof. Price) expected to have water flowing the entire length from the head of the Tent within a week of his writing. Thus would he be enabled to at once commence increasing the force of the monitors upon the claims now ready for washing, resulting in very satisfactory returns, the partial washings up to the present time having proved that the gold-contents gravel are second to none in California. The long summer days now coming will give very much greater facility for profitable use of the water than this property has had the advantage of heretofore. The manager speaks very encouragingly as to the satisfactory results he feels positive will accrue as soon as washing shall have fairly commenced. Three claims will be in full work—Enterprise, South Yuba, and Gopher—with one continuous face, thereby every appliance will be used in a profitable manner. The richest gold-gravel hitherto known in California was at Smartsville, running 84 cents to the inch of water used; the few partial clean-up this season on Blue Tent have proved that the top dirt will run 72 cents per inch, while the bottom dirt, of which there is at present near 1½ acres uncovered, must run much richer. Into this bottom dirt shafts are now being sunk, with a view of running off some part off the stuff while water is plentiful, and large returns cannot fail to be realised.

ASSHETON AND WEST ASSHETON.—The information from these mines is again highly satisfactory, indicating (at least, as far as West Assheton is concerned) that development only is required to make it a successful rival to its adjoining neighbour—Tan-y-Bwlch. We cannot too strongly point out to the shareholders the relative position of these two mines, nor can the fact be too forcibly expressed that the comparatively early development of West Assheton has been more marked in its features, pointing to eventual success, than foreshadowed in the previous history of Tan-y-Bwlch. This will be apparent to those acquainted with the peculiarities of the district, as well as to those who have closely watched the progress of the two mines. When it is remembered that the 80 fm. level in Tan-y-Bwlch has now a lode worth over 300*l.* per fathom, and improving in value as the drivage is extended towards West Assheton, and that the "ends" in West Assheton approaching Tan-y-Bwlch are opening out ore ground of precisely the same character, although, as the levels have not attained the same depth, similarly profitable results are as yet unrealised, it would be difficult to imagine that West Assheton will not become at an earlier stage of development a mine of at least equal value with Tan-y-Bwlch, which is now making large and increasing monthly profits.

STOCK EXCHANGE GENERAL MARKETS.—The monetary uncertainty in the market for the English Funds seems to have wholly disappeared, and they have resumed their upward movement, firmness being imparted by the easier state of money. The general influences affecting the markets for public securities are favourable for the moment, and the reports from the Continental Bourses show general steadiness.

RAILWAYS.—The reaction in railways from the depression of the last few weeks is still sufficiently strong to keep most stocks firm. The usual fluctuations have taken place in consequence of the operations of speculators, but there does not appear to be any sign of serious business on the part of the public. The closing of a few speculative accounts for the fall on the better traffics of the week sufficed to cause an advance, which is no sooner witnessed than it is taken advantage of to sell in anticipation of another drop in prices.

FOREIGN BONDS.—The tone throughout has been steady, and though the amount of business is still small, the tendency has been towards a general improvement. This movement has been especially noticeable in Egyptians, an appreciable advance having been established in the 1873 loan. There has been little or nothing doing in other Foreign securities, but a slight advance is registered in both Turkish and Spanish Bonds.

MISCELLANEOUS.—Canadian and United States Railways have advanced in several instances. Lombards have been flatter on the telegram announcing that the agreement for the sale to the Government of the Italian portion of the line stands but little chance of immediate acceptance. Anglo-Egyptian Bank have advanced.

MINING NOTABILIA

[EXTRACTS FROM OUR MINING CORRESPONDENCE.]

PENSTRUTHAL.—Attention should be directed to this property by investors at the present low price of shares. Independent of the great chances of success they have on the tin portion of the sett, there is every probability of its becoming a large copper producing mine.

SAINT PATRICK.—A great change has lately taken place in the most important point of operation—the 120 yard level cross-cut. Here the ground which has hitherto been very hard has suddenly become soft, and is now being driven rapidly. Feeders from the east and west lode are daily intersected, charged with lodestuff, and spotted throughout with lead.

SOUTH WHEAL CROFTY.—We learn from the mine that the bottom levels are still being vigorously prosecuted, and from present indications a great future is predicted. We do not know how soon a valuable discovery will be made. Shares about two years ago were saleable at 125*l.*

GLYN.—The various points of operation at this mine appear to be opening out up to, if not exceeding, the anticipations of the manager. The shaft sinking below the 15, and now down 7 fathoms, is producing fine crystallised lead, which must be considered a very favourable indication for cutting the main lo le highly productive at the 30. When this point is reached good returns of lead may be expected.

NEW CAROLINE (Perran Uthnoe).—The south or new lode has been opened on, and shafts sunk upwards in length of 100 fms., and in no place has the lode been found less than 7 ft. in width. The deepest shaft and winze has been sunk about 17 fms. from the surface; for 7 fms. long at the bottom of the lode it contains oxide of copper as black as coal. Every person who has inspected the mine says it is similar in every respect to North Basset when first discovered. The gossan is admitted by all to be equal and very similar to Wheal Buller. This stratum is composed of a decomposed grey elvin and patches of killas. West of this there is a cross-course which appears to have picked up two or three lodes from 1 ft. to 3 or 4 ft. in width, and forms a junction between the cross course and an elvin course of a different colour, bearing a little to the south of east. This sett or mine

is surrounded by the Old Fortune, Godolphin, Wheal Neptune, and other mines, all of which were formerly very productive for the richest copper ores found in the district during the last century.

NORTH CORNWALL.—Information has been received which will be very advantageous to the company, so far as the buildings connected with this mine are concerned, and immediate preparations are contemplated for the erection of an engine of sufficient power to facilitate the thorough development of the mine. The lode upon which operations will be carried on is certainly one of most promising merit, and it is not improbable that profitable results will immediately follow explorations. As lead properties now are so in the ascendant capitalists should direct their attention to this concern.

TEMPLE.—It is gratifying to learn that the recent important discovery not only continues but is improving as the level is driven into the hill. From present appearances there is every reason to anticipate early profits, as from the situation of the property it can be worked at a mere trifling expenditure.

SOUTH WHEAL CROFTY.—Many of the shareholders have often wished the manager would endeavour to cause a report of the operations to appear once a fortnight in the Journal. Speculators are closely watching this mine, as there are some very important points to come off, especially the cutting of the great East Pool copper lode at the 180. We hope the boring machine so highly spoken of will be introduced here at no distant period. The sale of copper last week amounted to 752*l.*, which was highly satisfactory, and was, in fact, beyond anticipation. The moment the market improves for tin there will for a certainty be an extraordinary rise in these shares, which have been much in demand during the last few days, and a great number of transactions have taken place, although they are reckoned to be firmly held, and are considered some of the best shares to hold in the county of Cornwall. Another month or two will tell.

FOREIGN MINES.

DON PEDRO.—Telegram from Rio, dated May 9: Produce for the month (April) 2250 cits. North Gully branches poor and small.

CHICAGO (Silver).—Telegram from Mr. W. S. Godbe, the superintendent at the mine:—"I cabled estimated value based upon hand assays; 10 tons since extracted works $200 per ton. The developments are insufficient to determine value beyond material enhancement. Both stacks (furnaces) running. I have remitted you by draft 2500*l.* sterling.

VICTORIA (London).—South Clunes Mine: During the month ending March 16 2030 tons of quartz were crushed, giving an average of 8 dwts. 21 grs. The profit for the above period, after payment of 63¾*l.* for new plant, amounted to 1364*l.* The remittance received amounts to 200*l.*, and in addition to it a further dividend amounting to 300*l.* had been declared.

CEDAR CREEK.—Telegram from the agent, Col. T. B. Ludlum, May 12: "The gross returns for the past month, including sale of water, are $18,500. The running expenses are $8500. Badger not cleaned up; have resumed tunnelling."

BIRDSEYE CREEK.—Telegram from the superintendent, Mr. G. S. Powers, May 10: "We have cleaned up after a run of 30 days. The gross returns are $7000. The profit is $1500. I send you a remittance of $1000."

EBERHARDT AND AURORA.—Telegram received from the mines, Saturday, May 6: "1000 tons at mill; started up fourth; all going well."

RICHMOND CONSOLIDATED.—R. Rickard, April 21: Since my last we have resumed drifting in the 700 level on the ore body; so far as opened on it is looking very well. Next week we expect to begin work in the 800 drift and sinking of the shaft. At the smelting works we are giving everything a thorough overhauling; one furnace is re-lined, and a second nearly completed. The new cylinder for the engine will be ready to leave the shop at San Francisco on the 28th. I think we shall be able to get it in place by May 10 or thereabouts, and by that time we shall have everything in repair around the furnaces. We are now cleaning out the flue from the furnaces, and find a large accumulation of flue dust; it is thoroughly calcined, and in a good state to be smelted after being clayed. We have had fine weather for the past week, and the roads are again getting in good condition for hauling. There are large quantities of charcoal being made this season, and there is no fear but what the supply will be equal to the demand.

EXCHEQUER (Gold and Silver).—Lewis Chalmers, April 17: Three miners having left and one sick I am short handed, and had to cease stoping in the 300 until I get more miners. Meanwhile, and until I get the team up, I have let a contract at 35 per foot to drive this level 50 ft. further; this looks well. The stope 200 ft. from the engine-shaft also looks well, and is up 20 ft. at the south end and 18 ft. at the north end, and 23 ft. long. At present the north end looks best. I drove a cross-cut on this level east from the 400 ft. level 5½ ft. in ledge matter, and no appearance of a hanging wall. The cross-cut in the uppermost stope is 44 ft. from wall to wall—all lode. I have 100 tons of ore ready to ship when the road is open, and plenty to break when I can get it away.

LA MANCHE (Newfoundland).—J. Nancarrow, Feb. 15: Since my last, and while Capt. Bradley was in St. Johns, I cross-cut to the south in the 20, east of Cooper's shaft, where I thought a part of the lode was standing, which proved to be the case. I found it to be about 2 ft. wide, containing lead throughout. To the west of this shaft at this level we are now stoping and putting in a stull, where the lead will produce 2 tons of lead per fathom; this is now being worked by four men. At McConochie we have six men driving the 20 east in a lode worth fully 2 tons of lead per fathom. A month ago we intersected a vugh or cavity, and today I have gone forth 4 fms. and find good lead for the whole distance; how far this cavity continues I do not know; here we are laying open a fine piece of productive ground. At this level we have put in a good stull, and are ready to stope in a rich lode at any time when required, but at present while the cavity lasts our men can raise fully as much lead as in stoping, and we are laying open a fine piece of ground, which will greatly add to the intrinsic value of the mine. Since my last report we have also driven the shallow adit east in a good lode, but is also now idle, having our miners working at our deepest points. The deep adit has also been driven where the lode has greatly improved, and when working produced good stones of lead; this is also idle for reasons above stated. In consequence of the severe frost and snow no dressing operations have been or can be carried on till more favourable weather sets in. In conclusion, I am happy to say I never saw the prospect of the mine throughout so cheering as at present, and at this time we could employ 50 miners on productive ground.

—J. Nancarrow, March 15: Since my last report of the 16th ult. our miners (which are a very small number) have been principally employed in driving the end at the 20, east of McCoy shaft, in the vugh or cavity (referred to in my last) in a good lode worth fully 2 tons of lead per fathom. The vugh still holds, and how far I do not know; we can yet see forth some fathoms, and the lead continues fully as good if not better. This I look at as a very favourable feature for the future of the mine, there being a rich lode in the bottom of this level, and I am of opinion this part of the lode has never been seen in the level above or the 10, which can be proved at any time. We are now preparing to start our water for pumping, which I expect to do to-morrow. I find we have excavated from Sept. 1, 1875, to March 1 of present year, 16 fms. 4 ft. 6 in., which was done in about 2½ months, the remainder of the time the mine was full of water; while we were able to work I calculate we rose lead enough to pay expenses, besides laying open many fathoms of productive ground, which will be soon available for stoping, and had it not been for the mine being full of water three different times, we should have had a large quantity of lead at surface by this time. We have stulls put in both at McConochie and Cooper's ready to stope in good lead at any time, so as to keep all the dressing in full operation after what has accumulated is cleared off.

BENSBERG.—Charles Craze, May 8: Victoria Shaft: The water is still too much for our engine and pitwork, although the former has been going at an average of 17 strokes per minute, with pitwork working first-class for the last month. We have not yet been able to drain the bottom of the shaft. We have also during the last fortnight fixed the large Hayward Tyler pump in this shaft, about 25 feet from the bottom (which is quite enough for the suction), but we find it will not lift the water to surface by 3 or 4 ft.; however, we think this difficulty can be overcome by bringing up a drain to the same depth to take off the water, this we are now doing. Our small boiler has also given us some trouble lately, having sprung leak three times in the last fortnight; we had it repaired twice, and yesterday it was leaking again so much that we were obliged to turn it idle; as soon as it is repaired we shall again try the H. T. pump, and will do our best to drain the bottom of the mine as soon as possible. The 14, west of this shaft, was driven 9 ft. in April; the lode for this drivage was about 2 ft. wide, well defined, and produced 1½ ton of ore per fm., which is its present width and value, and I have no doubt from its appearance, when met with in the deeper level, will be much more productive. The 14, east of this shaft, was driven 10 ft. in last month, and I am pleased to say the lode in this end has greatly improved in appearance, and will produce fully 1½ ton of good ore to the fathom; should this continue we shall open out some good paying ground here. In conclusion, I would remark that while it must necessarily be discouraging to you that the mine is not yet drained, yet to no one has it been, or is it now, a source of greater trouble and anxiety than to myself. Every effort that could be made, night or day, has been made, and I hope with a continuance of the same energy we shall soon be able to report the mine in fork.

ALAMILLOS.—May 3: The lode in the 60, west of San Francisco shaft, is strong and regular, but has fallen off very much in value. The lode in the 40, west of San Felipe shaft, yields good stones of ore. The lode in the 50, east of La Magdalena cross cut, is divided into two parts; the driving last month was on the north, which failed; the men are now put back to the south part, in a fine lode, worth 2 tons per fathom. In the same level west the main slide is in the middle of the level. No lode has been met with in the 85 cross-cut, north of San Enrique shaft. In the 85, west of San Adriano shaft, the lode is very changeable, and not nearly so good as it was. The 50, east of San Victor shaft, has opened splendid ore ground in the past month, but is not so good at present, yielding 1½ ton per fathom. The lode in the 60, east of this shaft, contains good stones of ore; but in the same level west it has failed very much. The 40, west of San Carlos, is in a small and unproductive lode. The 40, east of air shaft, is in a regular and promising lode, worth ½ ton per fathom. There is no improvement in the 50, east of Crosby's. In the 50, east of Judd's, the lode contains stones of ore. The lode in the 60, east of Judd's, has failed very much, now yielding ½ ton per fathom. No lode has been met with in the 70 cross-cut, north of this shaft. The driving of the 50, east of Judd's cross-cut, is resumed, to get it under Sanchez winze, in which there is a good lode. The lode in the same level west is a little larger than it was, but remains of no value. The 30, west of Swaffield's shaft, is in a small and disordered lode. The 30, west of adit shaft, has passed through a strong cross-joint, which appears to have injured the lode, which now yields ¼ ton per fathom. Moderate progress is being made in sinking Taylor's engine-shaft below the 85. Bigge's shaft, below the 25, will be deep enough for a new level in the present month. The ground in St. Tomas winze, below the 25, is moderately easy for sinking. In Abercrombie's shaft, below the 25, the men are working very regularly. The lode in Rega's winze, below the 25, has failed in the last few days. Figuera's winze is holed to the 40, the lode yielding 1 ton per fathom. Marto's and Lozano's winzes, below the 50, yield stones of ore, but not enough to value. Fecundo's winze, below the 20, is unproductive and very hard. In Sanchez' winze, below the 25, the lode is smaller and less productive than it was, yielding 1 ton per fathom. The weekly samplings were kept up very regularly in the past month, and the stopes are now yielding the usual quantity of ore. The works at surface are going on very regularly, and the machinery is in good working condition. We estimate the raisings for May at 200 tons.

LANESTOSA.—May 4: Asuncion: The 130 metre level, driving north, continues in hard sandstone, with patches of dolomite. The same level south has intersected the lode, which presents a vein of calcite 2 ft. wide, enclosed in sandstone. The 100 south has now reached under the cave from the 80, and the ground has changed to soft calcareous matter, with decomposed shale. The adit north, on the west lode, is in ground composed of soft sandstone; and, as the signs of lode about are very slight, with little hope of improvement, explorations here have been closed. The cross cut east from the adit, on the caunter lode, is in hard, marly limestone, which shows that there is no more lode ahead, and driving is, therefore, stopped. The driving of the adit south of St. Tomas winze is taken up to prove the main lode beyond the junction which it forms here with the caunter.—Glanrafon: Peace shaft, sinking from surface, is in a lode 2 ft. wide, composed of bands of flookan and soft carbonate of lime, enclosed in siliceous shale.—La Berta: In Guillermo sink, the rock being flinty and much broken up with divisions and veins. It is hoped that this stone is of small extent, and that the shaft will soon be through it.—Ore returned for April: 4 tons calamine, 12 tons lead, and 20 tons of mixed ores, all from former accumulations and burrows. Future returns are dependent upon rainfall and discoveries.

LINARES.—May 3: Pozo Ancho: The 100, east of Warne's engine-shaft, is in a very wide lode, and worth 1½ ton of lead per fathom. The lode in the same level west is strong, but without ore. The 85, west of Crosby's shaft, continues unproductive. The driving of the 105 cross-cut, south of Peill's shaft, is resumed. The driving of the 90, east and west of this shaft, has been commenced, the lode yielding 1 ton per fathom in each end. The 65, west of Peill's, is in a small unproductive lode. In the 55, west of this shaft, the ground is hard, and the lode small, yielding ⅛ ton per fathom. The lode in the 90, east and west of San Francisco shaft, is producing 1 ton per fathom in each end. The 75 and 65, east of this shaft, are each yielding 1 ton per fathom. In No. 206 winze, below the 65, the lode is disordered, but it is expected to improve shortly; it yields 1 ton per fathom. No. 207 winze, situated east of Peill's engine-shaft below the 75, produces 1 ton per fathom. No. 208 winze, below the 75, east of San Francisco, also produces 1 ton per fathom. The weekly samplings have been kept up without difficulty in the past month, and now, although some of the best stopes on the north lode are exhausted, we are able to supply their places from Warne's Mine. The surface work is going on very regularly, and the machinery is in good condition. We estimate the raisings for May at 200 tons.—Quilentos Mine: The 90 cross-cut, south of Taylor's shaft, is hard; the men are working well. The 80, west of this shaft, is in an open lode, and letting out much water. The same level east is in a powerful lode, with occasional lumps of ore, but not opening profitable ground. The 55, east of Addis's, is in a large, strong lode, without value. The lode in the 55, east of this shaft, is 5 ft. wide, yielding 1 ton per fathom. The 55, west of Henty's, is in an open and easy lode, of no value. The lode in the 65, west of San Carlos, is regular and well-defined, producing ¼ ton per fathom. The 80, west of this shaft, is very easy for driving, but without ore. The same level east is also easy, and yields good lumps of ore, worth ¾ ton per fathom. The 68, east of San Carlos, continues unproductive. The lode in the 45, east of Judd's, is small, and of no value. No lode or branch has been met with in the long cross cut at the 32 north of this shaft. In Addis's shaft, below the 65, the men are making good progress. The lode in Cicero's winze, below the 45, is small and poor. Reza's winze, below the 55, is unproductive, the lode being split into branches. The lode in Givo's winze, below the 45, has failed very much in the past fortnight, but still yields 1½ ton per fathom. The lode in Castilla's winze, below the 55, is of no value. Galligo's winze, below the 32, is in a small and regular lode, with good stones of ore; worth ¾ ton per fathom. We have estimated the raisings for May at 150 tons.

FORTUNA.—May 3: Canada Incosa: The 120, driving west of O'Shea's shaft, is in a large and well defined lode. The lode in the 110, west of Judd's shaft, yields ¾ ton per fathom. The lode in the 30, east of San Carlos, remains poor. The 40, west of Abercrombie's shaft, yields 1 ton per fathom, and the same level east produces ½ ton per fathom. The 60, west of San Pedro shaft, is in a better defined lode, which contains a little more lead, but not enough to value. The 60, east of San Frederico, is in hard ground, and poor. The 120, east of O'Shea's shaft, is in a large strong lode, yielding ½ ton per fathom. The 110, east of Addis's, produces 2 tons per fathom. The lodes in the 90, west of this shaft, and the 80, west of Kennedy's, are large, and produce ½ ton per fathom in each end. The lode in the 90, west of Kennedy's, shows spots of lead ore. In the 90, east of Caro's, the lode has fallen off a little, but still yields 1 ton per fathom. The 80, east of Caro's, is in a large and rich lode, worth 2¼ tons per fathom. Good progress is being made in San Pedro shaft, below the 60. The lode in Lownde's engine-shaft, below the 90, decreased in value in the past few days, but yields 1¼ ton per fathom. Garcia's winze, below the 50, has improved in appearance, and produces 1½ ton per fm.—Los Salidos: The 120, west of Buenos Amigos shaft, has improved a little, and yields ¾ ton lead per fathom. The lode in the 110, west of San Carlos, produces ½ ton per fathom. The 130, west of Morris's shaft, continues to yield ½ ton per fathom. The same level east is still poor, and the ground hard. There is no alteration in the 120, east of Morriss's. The lode in the 110, east of San Pablo, still continues to look well, opening out good stoping ground, worth 2¼ tons per fathom. The 100, east of San Miguel, is in a small and hard lode. The 25, west of Swafield's shaft, is in a well-defined lode, and opening out splendid tribute ground, worth 3 tons per fathom. The 35 and 45, west of this shaft, are without ore to value, the laiter being in disordered ground. The 55, west of Palgrave's shaft, continues unproductive. The 65, west of this shaft, is in a rather small lode, yielding ⅛ ton per fathom, but an improvement is expected shortly. The lode in the same level east has improved very much, and produces 1½ ton per fathom. The 55, east of Palgrave's, continues to open out good stoping ground, worth 2 tons per fathom. Nothing has been met with in the 35 cross-cut north. The 25, west of Peill's, is in a small unproductive lode. The lode in the same level east contains quartz, intermixed with lead ore, valued at ¼ ton per fathom. In Buenos Amigos engine-shaft, below the 120, the men continue to work well. In Cox's shaft, below the 110, the ground is harder, but the men are making fair progress. Castro's winze, below the 45, is a small lode of no value. The lode in Savio's winze, below the 100, has fallen off in value, and the ground is harder, lode worth 1 ton per fathom. Marius's winze, below the 35, is in a large lode, containing no lead to value. Oake's winze, below the 110, is in a lode 2 ft. wide, containing quartz and lead ore, valued at 3 tons per fathom.

LUSITANIAN.—May 2: Palhal: The lode in Taylor's engine-shaft has not been taken down, but continues its usual size, and is composed of quartz and small stones of ore. The 110 cross cut south is still hard, and we have found no more branch or lode.—Levels on Basto's Lode: In the 190, west of Taylor's shaft, the lode is worth 2 tons of ore per fathom. In the 180 west the lode is 4 ft. wide, composed of quartz and ore to the amount of ¼ ton per fathom. In the level above, the 170, the lode is 2 ft. wide, producing 1 ton of ore per fathom. The lode in the 180, east of River shaft, is 1 ft. wide, composed of flookan and quartz. The lode in the 150, west of Taylor's, and west of the slide, is very small, but yields stones of ore at times. The 28, east of River shaft, is on a lode 6 ft. wide, yielding ¼ ton of ore per fathom. No change in the 50, west of the slide; the lode has a regular wall. The Mill lode in the 70, east of River shaft, is regular, and produces a little ore. Basto's lode, in the 90, east of River shaft, is 8 in. wide, of flookan and schist, spotted with ore; and in the 70 east ½ ft. wide, of quartz and flookan, with stones of lead. Winze No. 100, going down under the 150, west of Taylor's, is yielding 2 tons per fathom.—Carvalhal: At the 60, west of the cross-cut, south of Incline shaft, the lode appears to have split into two parts, each 1 ft. wide, and composed of loose and hard quartz. One part goes very fast towards the north, and has produced stones of blende; the other keeps its regular course west.

PESTAREN A UNITED.—Thomas Roberts, May 9: District Val Toppa: Zero Level: The third cross-cut westward was driven in April 2·40 metres; we may expect to reach the lode by this cross-cut in about 3 metres more driving; set to five men, for May, at 115 frs. per metre. In the intermediate level, below Zero, the end south on the western lode advanced last month 1·75 metre; set to six men, at 200 frs. per metre; the lode here yields 10 tons of ore per fathom, worth about 15 dwts. of gold per ton. A new stope in the bottom behind this end yields 8 tons per fathom, worth 15 dwts. per ton; and is being worked by six men, at 25 frs. per metre. The drive north of winze, under this level, advanced in April 1·60 metre, and is set for the present month to three men, at 100 frs. per metre; lode yielding about 4 tons per fathom, at 9 dwts per ton.—Great Quartz Lode: The drive in north end of ground, above No. 2 level, advanced 2·55 metre; re-set at 115 frs. per metre; lode producing 10 tons per fathom, at 7 dwts. per ton. A new rise behind this end was put up 80 c., and set for May to two men, at 120 frs. per metre; lode producing 12 tons per fathom, at 9 dwts. per ton. Stope in bottom of No. 2 on this lode, south of winze, yields 10 tons per fathom, at 7 dwts. per ton, and is being worked by four men, at 40 frs. per metre. End south, under No. 2, on branches of new lode, yields 5 tons per fathom, at 8 dwts per ton; set to one man, at 70 frs. per metre. Stope in bottom, behind this end, set to four men, at 30 frs. per metre; lode yielding 10 tons per fathom, at 9 dwts per ton. End north of winze, on the same branches, is now yielding 10 tons per fathom; worth about 9 dwts. per ton; and is being driven by four men, at 120 frs. per metre. The stope in bottom of No. 2 level, south of the fourth cross-cut on new lode, yields 8 tons of 8 dwt. ore per fathom; during the present month we intend opening out in the east side of stope on some branches gone off in that direction. The end south of fourth cross-cut, on the lode or branches east of new lode, was driven in April 1·70 metre, and is set to two men for May at 95 frs. per metre, producing about 2 tons per fathom, worth 7 dwts. per ton. No. 3 level south, on the great quartz lode, was driven in April 1·15 metre; lode 15 in. wide, carrying spots and strings of pyrites. I fear this end will remain suspended for May on account of our being rather short of miners. The continued rains interfered in the past month very much with the carriage of ore. In my letter of the 2nd inst., I advised you of our melting of gold for April from Val Toppa district: 198 ozs. 3 dwts. 21 grs., obtained from 277·906 metric tons; average per ton, 14 dwts. 6 grs.—District Pestarena: We melted an the 5th inst. the gold obtained from 98·566 metric tons of ore milled in April; produce, 52 ozs. 0 dwts. 14 grs.; average per ton, 10 dwts. 18 grs. The ore treated was about the same quality as that treated in March, being a mixture from the 55 end north at Peschiera, and the 33 end north; a portion also came from the opening of the new incline under the 46, and a small quantity from the bottom. In consequence of the giving out of the drum, which breaks the angle of pump-rods at the 16, and the placing of a new pump in the shaft, 1·45 metre only was sunk in the new incline last month. The lode in this shaft yields after the rate of 5 tons per fathom, which we estimate to be worth 2 ozs. 11 dwts. of gold per ton. The sinking is now set to 12 men, at 370 frs. per metre. While the water impeded the sinking of the shaft, the men covered with timber part of the old sink in bottom of the 80 north of new incline, made preparations for stoping the north end of ground, and drove the cross-cut westward at the 65, towards No. 2 lode, 2 metres. The 55 north was extended 11·50 metres; set for May at 55 frs. per metre; lode producing at present about ½ ton per fathom. Stope in back of No. 1 level yields 3 tons of ore per fathom; present price for driving, 17 frs. per metre. The 33 north on No. 2 lode advanced 4·90 metres; lode poor. Stope in back yields 2 tons per fathom.—Acquavite: The lode in the 55 end south yields 1¼ ton of ore per fathom; this end was extended 8 metres, and is set for May at 75 frs. per metre. In the 23 end north, 3·35 metres were driven; lode small; price for May, 90 frs. per metre. We have succeeded in finding more miners, and have increased our forces underground.—Surface: Owing to the unfavourable weather, not much progress has been made in our new surface works. Weather permitting, the tramroad from Acquavite adit will be connected to the new floors at Peschiera this month, and over it will be brought the ore from Acquavite Mine to the crusher. Fair progress is being made in the erection of the six additional mills.

For remainder of Foreign Mines, see to-day's Supplement.]

A new alloy, resembling silver, and called "neogen," consists of 58 per cent. of copper, 27 per cent. of zinc, 12 per cent. of nickel, 2 per cent. of tin, and of aluminum and bismuth each 0·5 per cent. These two latter metals give the alloy a silvery whiteness, and a great capacity for retaining polish.

CEDAR CREEK HYDRAULIC GOLD MINING COMPANY.—The Cedar Creek is an English company, under the management of Col. T. B. Ludlum, and is the pioneer of deep hydraulic mining. They own about 30 claims, some of which are in the Gold Run district, and are washing now at five different places, using about 4000 inches of water. A long tunnel, about 3000 ft., is projected, and a large part of it completed and now in use. This tunnel is intended to reach the whole of the company's claims in its vicinity, and will be entered through four different shafts. Their Burleigh drill is driven by water (which is the only motive-power used by this company), and works its way with great rapidity through an exceedingly hard trap rock. About 60 miles of ditch brings water from the American river and its tributaries for their own use and for sale to other companies.—*Dutch Flat Forum.*

HALIFAX.—May 12: The following quotations are from Mr. J. H. Thackrah's list:—Halifax and Huddersfield Union Bank, 29⅝; Halifax Joint-Stock Bank, 29; Halifax Commercial Bank, 24¾; London and Yorkshire Bank, 27s. 3d.; John Crossley's, 13⅛; Whitworth and Co., 8¼, ex div.; Elland Gas, 20; Rastrick Gas, 18⅝; Bradford Brick and Tile, A, 21; ditto, B, 7; Charlestown Brick and Tile, 9¼; Ripponden Commercial, 11½; Hebden Bridge Cotton, 10¼; Yorkshire Boiler Insurance Company, 22s. 6d.; Norton Brothers, 8.

THE COAL TRADE

Mr. J. R. Scott, the Registrar of the London Coal Market, has published the following statistics of imports and exports of coal into and from the port and district of London, by sea, railway, and canal, during April, 1876:—

IMPORTS.

By sea.	Ships.	Tons.	By Railway and Canal.	Tons	c.
Newcastle	130	112,011	London & North-Western	79,095	19
Seaham	24	12,608	Great Northern	66,599	0
Sunderland	85	56,979	Great Western	56,998	6
Middlesborough	2	608	Midland	97,294	0
Hartlepool	64	24,384	Great Eastern	45,423	11
Scotch	8	2,541	South-Western	4,358	17
Welsh	6	1,167	London, Chatham, & Dover	1,531	0
Yorkshire	28	4,141	South-Eastern	1,125	6
Duff	1	319	Grand Junction Canal	330	10
Smallcoal & cinders	25	4,013			
Total	373	218,761	Total	352,776	9
Imports—April 1875	459	253,705	Imports during April 1875	416,333	11

Comparative Statement, 1875 *and* 1876.

By Sea.	Ships.	Tons.	By Railway and Canal.	Tons.
Jan. 1 to April 30, 1875	2054	1,168,607	Jan. 1 to April 30, 1875	1,717,286
Jan. 1 to April 30, 1876	1958	1,164,270	Jan. 1 to April 30, 1876	1,682,454
Decrease—present year	96	4,337	Decrease in the present year	34,832

EXPORTS.

Railway-borne coal passing "in transitu" through district		48,469
Sea-borne coal exported to British possessions, or to foreign parts, or to the coast	52,772	
Ditto, sent beyond limits by railway	11,794	
Ditto, by canal and inland navigation	2,728 =	67,294
Railway borne coal exported to British possessions, or to foreign parts, or the coast	28,993	
Ditto, by canal and inland navigation	27 =	29,020
Sea-borne coal brought into port and exported in same ships		2,079
Total quantity of coal conveyed beyond limits of coal duty district during April, 1876		146,862
Ditto, April, 1875		141,799

Comparative Statement, 1875 and 1876.

Total distribution of coal from Jan. 1 to April 30, 1876	632,975
Total distribution of coal from Jan. 1 to April 30, 1875	608,603
Increase in the present year	24,372

General Statement, 1875 *and* 1876.

Decrease in coals imported by sea during the present year	34,832	
Decrease in ditto by railway	4,337 =	39,169
Add increase in coals exported		24,372
Total decrease in trade within London district during present year		63,541

COPPER ORES.

Sampled April 26, and sold at Swansea, May 9.

Mines.	Tons.	Produce.	Price.	Mines.	Tons.	Produce.	Price.
Cape Ore	670	31½	£24 12 0	Cape Ore	26	27⅝	£21 11 6
ditto	65	31¾	24 12 0	ditto	63	27⅝	21 11 6
ditto	65	31¾	24 12 0	Berehaven	123	7½	5 14 6
ditto	59	32¼	25 5 0	ditto	90	9½	7 6 6
ditto	59	32¼	25 6 0	ditto	90	7¾	5 15 6
ditto	59	36½	25 6 6	ditto	82	7⅝	5 13 6
ditto	52	36⅛	28 11 0	Copper Ore	107	1¾	1 2 0
ditto	52	28¼	29 2 6	ditto	25	6⅛	4 15 0
ditto	4	28⅜	22 8 0	Knockmahon	129	8⅝	6 13 6
ditto	65	27⅜	21 11 6	Sweepings	1	7	4 3 0

TOTAL PRODUCE.

Cape Ore	670	£16,461 11 6	Knockmahon	129	£861 1 6
Berehaven	385	2,348 10 6	Sweepings	1	4 3 0
Copper Ore	133	236 9 0			

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
P. Grenfell and Sons	63	£ 1,579 7 0
Nevill, Druce, and Co.	66	1,603 3 0
Vivian and Sons	249	3,320 1 0
Williams, Foster, and Co.	756	8,863 7 0
Mason and Elkington	65	1,559 0 0
Charles Lambert	59	1,492 14 0
Sweetland and Co.	59	1,494 3 6
Total	1317	£19,911 15 6

Copper Ores for sale on May 23.—Cape Ore 65, 65, 65, 66, 66, 26, 57, 70, 70, 16, 7, 2, 64, 63, 62—Algerian Ore 91, 73, 34—Knockmahon 105—Cronebane Ore 80—Copper Matt 39—Cuba Precipitate 3, 5, 10—Total, 1204 tons.

TOTALS AND AVERAGES.

21 cwts.	Produce.	Price.	Per unit.	Standard.
Whole sale	1317	19 5-16	£15 2 5	15s. 7d.	£ 99 14 9

COPPER ORES.

Sampled April 19, and sold at Tabb's Hotel, Redruth, May 4.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
West Seton	96	£4 3 0	South Crofty	56	£3 14 0
ditto	64	4 12 6	ditto	2	17 0 0
ditto	63	5 7 0	Carn Brea	47	4 19 0
ditto	61	5 19 6	ditto	46	2 3 6
ditto	59	7 1 6	ditto	37	4 8 6
ditto	58	5 18 6	ditto	16	7 3 0
ditto	55	5 2 6	Botallack	58	9 19 6
ditto	52	4 0 6	ditto	51	11 16 6
ditto	40	7 1 0	ditto	31	0 12 6
ditto	35	6 10 6	ditto	1	25 0 0
ditto	13	5 3 6	North Busy	35	1 3 0
ditto	7	1 10 0	ditto	31	4 4 0
Crenver and Abraham	80	3 16 0	ditto	29	4 4 0
ditto	75	4 17 0	Carn Camborne	37	2 11 6
ditto	70	2 19 6	ditto	36	4 0 6
ditto	60	2 17 0	West Poldice	44	6 3 6
ditto	50	2 3 6	ditto	20	8 11 0
ditto	14	14 5 6	St. Aubyn United	28	5 14 0
West Tolgus	82	6 1 6	ditto	22	4 7 0
ditto	62	4 10 6	Champion's Ore	40	4 3 6
ditto	58	5 15 0	ditto	4	0 15 0
ditto	55	5 13 6	South Roskear	35	5 14 0
East Pool	64	2 19 0	West Roskear	18	2 5 6
ditto	61	2 4 6	ditto	16	7 6 6
ditto	59	3 1 0	Condurrow	32	1 6 0
ditto	40	2 5 0	Cathedral	32	2 2 6
ditto	32	2 19 6	Wheal Unity Wood	30	5 2 6
South Crofty	63	3 19 6	North Treleigh Wood	2	9 0 0
ditto	58	4 13 6			

TOTAL PRODUCE.

West Seton	603	£2336 6 6	West Poldice	64	£442 14 0
Crenver and Abra.	349	1355 12 0	St. Aubyn United	50	255 6 0
West Tolgus	277	1598 6 6	Champion's Ore	44	170 0 0
East Pool	249	668 6 6	South Roskear	35	199 10 0
South Crofty	179	762 15 6	West Roskear	34	158 3 0
Carn Brea	146	610 16 6	Condurrow	32	41 12 0
Botallack	141	1226 0 0	Cathedral	32	68 0 0
North Busy	95	292 5 0	Unity Wood	30	153 15 0
Carn Camborne	73	240 3 6	No. Treleigh Wood	2	18 0 0

Average standard	£109 9 0	Average produce	67¼
Average price per ton	£4 15 0		
Quantity of ore	2415	Quantity of fine copper 165 tons 15 cwts	
Amount of money	£11,497 12 0		

LAST SALE.—Average standard £113 4 0 | Average produce 61¼
Standard of corresponding sale last month, £112 15 0—Produce, 6¼

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
Vivian and Sons	522	£2530 8 6
Grenfell and Son	201½	1326 14 9
Nevill, Druce, and Co.	247	1088 2 6
Williams, Foster, and Co.	228	1064 15 0
Mason and Elkington	434	1636 6 0
Copper Miners' Company	404½	1985 1 9
Charles Lambert	159½	742 14 3
Sweetland, Tuttle, and Co.	248½	1123 9 3
Total	2415	£11,497 12 0

NO SALE on Thursday last, May 11.

Copper ores for sale at the Royal Hotel, Truro, on Thursday next—Mines and parcels.—Devon Great Consols 626—South Caradon 765—Marke Valley 350—Gunnislake (Clitters) 309—Glasgow Caradon 240—Hingston Down 179—Brookwood 170—East Caradon 116—Bedford United 65—Belsone 26.—Total, 2649 tons.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

BONVILLES COURT COAL AND IRON COMPANY (Limited).—Capital 30,000*l*., in 5*l*. shares. To acquire the business, ironworks, &c., of the Bonvilles Court Coal and Iron Company (Limited), registered in 1873, including the shares and interest of the old company in the Saundersfoot Harbour and Railway. The subscribers (who take one share each) are—C. R. Vickerman, Hean Castle, Saundersfoot; C. H. R. Vickerman, Jesus College, Cambridge, undergraduate; H. W. Petre, Springfield, Chelmsford, no occupation; J. Beaumont, Merrow, Guildford, gentleman; T. Levick, Sunbury House, Watford, broker; H. M. E. Desmond, St. Cuthbert's, Great Malvern, Clerk in Holy Orders; J. Carlton, 8, Great Winchester-street, merchant. The directors are—Messrs. C. R. Vickerman, J. Beaumont, the Hon. H. W. Petre, Jas. Carlton, and the Rev. H. M. E. Desmond. The qualification for directors, except in the case of the gentlemen just named, is 50 shares.

WEST CWMYSTWITH MINING COMPANY (Limited).—Capital 16,000*l*., in 1*l*. shares. To carry on lead mining operations at West Cwmystwith, Llanfihangel-y-Croyddin, Cardigan. The property proposed to be acquired is comprised in a "tack note" granted by J. G. W. Bosnall to Thomas Ridley. The subscribers (who take one share each) are—Thomas Ridley, Newcastle-upon-Tyne, merchant; J. Metcalf, Newcastle, merchant; L. H. Gullachsen, Newcastle, upholsterer; J. Black, Newcastle, merchant; J. Heymer, Blackhill, Durham, agent; J. Fleming, Newcastle, solicitor; and W. Glendenning, Newcastle, merchant. The directors are—Messrs. J. Fleming, Thomas Ridley, A. Watson, J. Heymer, J. Metcalf, and L. Gullachsen, the qualification being the holding of 50 shares.—[We are informed that all the shares in this company have been privately subscribed for.]

BAGBIE GRANITE QUARRY COMPANY (Limited).—Capital 15,000*l*., in 5*l*. shares. To purchase of Mr. Jacob Forrest, of Chester Colliery, proprietor, his interest in the lease of a quarry at Begbie, parish of Kirkmalreck, and Anworth, Kirkcudbright. The subscribers (who take one share each) are—J. Bedell, 23, Parkfield-road, Liverpool, merchant; E. Johnson, Southport, colliery proprietor; M. Reynolds, St. Michael's Hamlet, Liverpool, merchant; J. Wingate, Brunswick-street, Liverpool; A. W. Chalmers, Alexander-road, Waterloo, Liverpool, accountant; J. N. Pitty, Waterloo, Liverpool, merchant; J. Lawrence, 3, Lord-street, Liverpool, solicitor.

WEBB'S WORCESTER TILERIES COMPANY (Limited).—Capital 10,000*l*., in 10*l*. shares. To acquire a freehold manufactory of tiles, &c., at Rainbow Hill, Claines, Worcester. The subscribers are—F. Corbett, 13, Lonsdon Crescent, 5; J. Wilesmith, Hallon, Worcester, 1; W. G. Pike, Worcester, 5; H. Corbett, Fort Royal, Worcester, 1; H. C. Webb, Rainbow Hill, Worcester, 1; E. Barnesley, Worcester, 1; J. W. Webb, Rainbow Hill, Worcester, 1.

NEW WELSH SLATE COMPANY (Limited).—Capital 100,000*l*., in 10*l*. shares. To carry out an agreement made between T. A. Roberts, of Selborne Chambers, Chancery-lane, of the one part, and S. Macdonald, of 52, Lombard-street, on behalf of the company, for the acquisition of the lease of the Drum Slate Quarry, Festiniog, Merioneth. The purchase is to be effected for 2500*l*. in cash, and 1700 preference shares of 10*l*. each. The subscribers (who take 1 share each) are—W. Barnes, 43, Spa road, Bermondsey, merchant; T. L. Roberts, 2, Clarence-row, Mortlake, builder; S. Macdonald, 52, Lombard-street, accountant; Wm. Jones, 1, Charles-square, N., mantle manufacturer; W. R. Phillips, Ashbourne-grove, Dulwich, shipbroker; T. Hunter, Guildhall Chambers, E.C., accountant; J. Parkinson, 188, Great Dover-street, Borough, mineral agent. The directors are not yet appointed.

CADAFARCH COAL AND FIRE BRICK COMPANY (Limited).—Capital 20,000*l*., in 10*l*. shares. To acquire the lease of the property known as Cadafarch, parish of Coychurch, Glamorgan. The subscribers are—W. Robotham, Pencoed, Glamorgan, mining engineer, 10; E. Hoppin, Heolfach, Ystraed Rhondda, overman, 10; E. Llewellyn, Heolfach, colliery clerk, 10; A. Williams, Heolfach, deputy fireman, 10; W. Jones, Heolfach, weigher, 10; E. Williams, Heolfach; D. Jones, Ystraed Rhondda. The company is registered without articles.

SOUTH HARMON LEAD MINING COMPANY (Limited).—Capital 36,000*l*., in 3*l*. shares. To acquire the lease of the Fedw Mine, near the Tylwch Railway Station, situate on the property of Capt. John Paull, in the county Radnor, according to an agreement made between that gentleman and Mr. John Owen. The subscribers (who take one share each) are—G. Bedford, Round Tree House, Upper Tulse Hill, colliery proprietor; J. Hansford, no occupation; J. Darall, Vicarage-road, Leyton; A. Kerly, 14, Great Winchester-street, solicitor; H. Halford, 26, Change-alley, broker; E. C. Ravenscroft, 5, Summer road, Croydon, secretary; R. Learmonth, Lavender Hill, Wandsworth. The purchase has been effected for 3500*l*., and shares to the value of 20,000*l*. The directors are Messrs. John Owen, of Ripley; G. C. Simmons, of Southsea; and W. Brookes, of Hinckley.

TOWN GREEN AND DISTRICT BRICK, LAND, AND BUILDING COMPANY (Limited).—Capital 30,000*l*., in 20*l*. shares. To carry on mining and brick making operations at Town Green. The first seven subscribers are—T. W. Grundy, Rainsford, near St. Helen's, Lancashire, secretary, 15; Peter Balmer, Ormskirk, Lancashire, architect, 50; J. Leslie, Knowsley, surveyor, 7; Peter Middlehurst, Crank, Rainsford, 12; S. Cowburn, Wigan, contractor, 5; J. Betham, Bukdale, Southport, builder, 12; S. Dewhurst, Sandhills, Liverpool, coal merchant, 15. The directors are Messrs. F. W. Grundy, P. Balmer, J. Leslie, P. Middlehurst, J. Belham, J. Dewhurst, and P. S. Cowburn, the qualification being five shares.

WESTMINSTER ASSOCIATION (Limited).—Capital 20,100*l*., in 100*l*. and 1*l*. shares. To carry on business as capitalists, commission, and financial agents, &c. The subscribers (who take one share each) are—W. C. J. Wingfield, J.P., 8, James-street, Buckingham Gate; J. A. R. Morison, St. Stephen's Chamber, Westminster; R. H. Stewart, 85, Eaton-square; J. C. Taylor, Army and Navy Club; R. R. A. Burgess, jun., Carlton Club; A. R. Blair, 7, Hyde Park Gate; F. W. Gregory, 14, Fishstone-road, S.W.

LIVERPOOL AND MANCHESTER PROPERTY COMPANY (Limited).—Capital 50,000*l*., in 10*l*. shares. This appears to be a building and financial company. The subscribers (who take one share each) are—R. R. Menton, Cheapside, Liverpool; D. Radcliffe, 73, Lime street, Liverpool; Alfred Billson, 10, Cook-street, Liverpool; J. O. Jones, 10, Cook street, Liverpool; Alfred Williams, 6, Tenny-on-street, Liverpool; R. M. Foster, 34, Oxford-street, Waterloo; H. L. Williams, 71, Grove street, Liverpool.

MONTOISON'S PATENT UNHAIRING AND TANNING COMPANY (Limited).—Capital 60,000*l*., in 10*l*. shares. To purchase the interest of J. L. de Montoison, in the Montoison Patent Wool and Leather Company (Limited). The subscribers are—E. Robinson, Brompton House, Stockport, 25; J. S. Harris, Buena Vista, Alexandra Park, Manchester, 10; Robert Scott, Diamond Mill, Oldham, 10; J. Allen, 26, Victoria-street, Manchester, 10; J. C. Sims, 1, Pembroke-grove, Manchester, 50.

BELL AND BLACK (Limited).—Capital 50,000*l*., in 10*l*. shares. To take over the business of Messrs. Bell and Black, vesta and match manufacturers, of Stratford. The subscribers (who take one share each) are—W. A. Adams, Walford Manor, Shrewsbury; J. A. Williams, 36, Augustine road, Birmingham; F. Shaw, 110, Hagley-road, Birmingham; R. H. Millward, 40, Chancery-lane; J. Spencer, Monkland House, Moseley; W. B. Adams, Leytonstone; and C. E. Williams, 36, Augustine-road, Edgbaston.

SUB-WEALDEN GYPSUM COMPANY (Limited).—Capital 25,000*l*., in 10*l*. shares. To deal in gypsum, plaster, lime, and cement. The subscribers are—C. Hook, Snodland, Kent, 200; J. A. Bosworth, Humberston; E. Ison, Ashby-de-la-Zouch, 30; F. W. Ticehurst, Battle, 30; H. Lowther, Addiscombe-road, Croydon; T. G. Zeal, Redhill, 100; W. Finlay, Redhill, 100.

FREEHOLD AND LEASEHOLD INVESTMENT TRUST ASSOCIATION (Limited).—Capital 75,000*l*., in 10*l*. shares. The title of this company explains its object. The subscribers (who take one share each) are—C. Addison, 16, Westbourne-square; W. J. Green, 8, Dunbar street; A. Pemberton Hobson, 6A, Victoria-street; A. C. Addison, jun., Carlton Club; G. R. Julian, Balham; J. H. Baxter, 34, Paternoster-row; J. M. M. Milne, 170, Oakley-street, Chelsea.

MINING NOTES.—The Cargolna lode at West Wheal Owles continue as good as last reported, and the mine generally is acknowledged to be looking better. The prospects of Wheal Peevor are improving, and the stamping power is to be increased. At Tincroft there are increasing reserves, and the returns will probably be increased. Carn Brea is also looking very well, and increasing returns. Killifreth and Unity Wood are opening up well, and the returns of these mines will increase. At Penstruthal Capt. Teague reports that the lode in Highburrow shaft is of a most promising appearance, and in the 46 west the lode is much better. At West Great Work a very promising lode has been cut, thought to be one of the West Godolphin lodes. At West Poldice an improvement is expected in the 42 east of shaft. At Glasgow Caradon the next sale is computed 240 tons. At South Condurrow they are sinking the boundary shaft with all possible dispatch. At South Frances the flat lode is driven into 21 ft., with no appearance of the north wall. At Wheal Grenville the 130 east is worth 20*l*. per fathom.

SALE OF MINE SHARES.—Shares in Wheal Owles are sought after by strangers as well as by those in the locality presumably acquainted with the merits of the property. One share, offered by auction at Penzance on Thursday afternoon, by Mr. W. Hosken Richards, was put up by Mr. Richards Boyns, Bank, St. Just, at 100*l*., and, after several further offers by him and others, was knocked down to Mr. Matthias G. Brown for 1[illegible]*l*. Another share was also purchased by the same gentleman at the same price. But a third was bought in by Mr. Trythall, the solicitor engaged in the sale, at 145*l*.

WEST POLDICE.—Capt. James Brown, of Redruth, has been appointed the manager, and Capt. George Johns, of St. Day, the resident agent. The mine is reported to be looking well.

WHEAL PEEVOR.—253 tons of tinstuff were sampled on Wednesday, and will be sold next week. It is expected that these sales of tin in the stone will cease shortly, as efforts are being made to get the new steam stamps to work as quickly as possible.

CARN BREA MINES.—A powerful winding engine has been purchased for these mines, to assist in the discharge of the very large quantity of tinstuff already discovered. From this it would seem that Capt. Teague has confidence in obtaining better prices for tin.

EAST WHEAL ROSE.—This silver-lead mine, which was formerly so rich, and paid very large profits, is again attracting attention. Scores of gentlemen from the North of England recently visited the mine, and after inspecting the surface, proceeded to look over the piece of undeveloped ground, about 350 fms. in length, on the run of Middleton's and other lodes to the south of East Rose. It is reported that a company will be formed for working it, with a capital of 50,000*l*.

An important discovery has been made at Wheal Basset, in the 70 cross-cut, where a tin lode has been intersected, and some splendid stones of tin have been brought up from it. A call of 2*l*. per share was made at the meeting on Tuesday, but it is hoped that if the tin in the 70 continues, it will bring the mine into a paying state.

Capt. Rabling deserves credit for the economical and business-like manner in which he has wound-up the affairs of the Wheal Florence United Mines. He was able to give the adventurers a dividend of 4s. 4d. per share, instead of calling upon them to pay the costs of winding up in the Stannaries Court. He undertook a great amount of trouble and work in collecting moneys and in the winding up, and has most liberally declined to accept any remuneration.

NORTH TRESKERBY.—At the meeting, held on the mine on Friday, the purser (Mr. Phillips, F.G.S., of London), presiding, the accounts showed:—Labour costs for eight months, 1480*l*.; merchants' bills, 124*l*.; lords' dues, 16*l*.: total, 1620*l*. Credit—Receipts for the sale of tin, 477*l*.; for copper, 151*l*.; for arsenic, 47*l*.: total, [illegible]; showing a loss on the eight months' working of 912*l*. The accounts were passed. A call of 5s. per share was made, and a number of shares forfeited for non-payment of calls.—The manager (Capt. R. Pryor) having stated that if the 80 in. pumping engine on the eastern part of the mine were set to work he should be in a position to return 500 tons of copper ore every two months, it was resolved that the purser (Mr. Phillips) should be requested to communicate with the absent shareholders on the matter, it being the opinion of the manager that the time had now arrived when the 80 in. pumping engine on the east part of the mine should be set to work to reach the rich bunches of ore already discovered, and to further develope the mine. A meeting for the decision of the shareholders will be held in about two months.—*West Briton.*

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—S. Toy, May 10: In No. 2 adit, driving east, there is no change to notice during the past week. No. 1 adit is producing saving work for dressing; the ground is favourable for driving, and of a kindly appearance for producing mineral. We have nine men sinking the new shaft from the surface, and are making fair progress. In the eastern part of the sett (Crowlwm) I have put men to clear the stuff from the western level; when this is finished I will put them to drive a cross cut to intersect the south lode.

ASSHETON AND WEST ASSHETON.—J. Craze, May 4: The boundary shaft is now down 3½ fms. below the 60. Bearers and cistern are in, and the men are engaged fixing lift and pent-house, in order to sink with a tackle in future. This will enable us to draw the stuff from all other points with greater facility. The 60 cross-cut is extended about 4½ fms. The 50, west of cross-cut, is extended about 11 fms.; here we have carried a small portion of the lode, which produced good saving work for lead. The lode will be all taken down, when we can avail ourselves of the whim engine to clear away the attle; set to four men, for one month, at 4*l*. per fathom. The 50, east of cross cut, is extended about 4 fms.; we are now taking down the lode, which is, "as far as seen," composed of spar, blende, and a little lead; this is not yet set. The rise in the back of the 50 cross-cut is now up about 2 fms.; set to two men, at 50s. per fathom. The 40 cross-cut is extended 13 fms.; set to six men, at 5*l*. per fathom, for the month, or to communicate with Assheton proper.—Assheton Proper: We have eight men clearing the different levels.—Tribute: A pitch in the back of the 8 east is set to two men, at 8*l*. per ton for lead. A pitch in back of the 8 west is set to two men, at 7*l*. per ton for lead. As soon as the other levels are made available, we shall set tutwork and tribute bargains. The pumping and winding engines and all other machinery are in good order and working well.

BAMPFYLDE.—J. Juleff, May 10: The 112 end, west of No. 4 shaft, is worth 10*l*. per fathom. No. 1 stope, in the back of the 112, west of No. 4 shaft, is worth 9*l*. per fathom. No. 3 stope, in the back of the 112, is worth 16*l*. per fathom; this stope will produce a good parcel of copper ore. In the 102 end west the lode is small, but it is worth 5*l*. per fathom, and looking very promising. The stopes in the 90 continue to look just the same as when last reported on.

BEDFORD UNITED.—William Phillips, May 11: There is no change to notice to-day. The mine throughout continues to look much the same as reported last week.

BLUE HILLS.—S. Bennetts, J. Gripe, May 6: The ground in the engine shaft sinking below the 76 fm. level continues favourable. During the past few days the men have been employed cutting in north below the slide or gossan to ascertain the extent of the heave, without as yet cutting the lode. A small soft branch of tinstuff has been cut through, and the ground is becoming wet, which indicates the lode being near. The tribute pitches remain much as last reported.

CARGOLL.—Capt. Jennings, May 9: The 11 east is still improving; the lode is 2½ ft. wide, with a leader of lead, producing 1½ ton per fathom—a very pretty lode. Very fair progress is being made in the 24, east of Doctor's shaft, but nothing to value in the lode as yet. The main lode is looking very cheering, producing stones of mundic, impregnated with lead, blende, and copper ore, with an increase of water.

CATHEDRAL.—J. Michell, May 8: Set the sumpmen to cut plat, barrow road, put in peathouse all complete for sinking the shaft below the 42 fm. level for 18*l*., if finished in two weeks and three days to have 20s. prem. The 42 end to drive east by three men and three boys, at 5*l*. per fathom. The lode is 4 ft. wide, worth about 10*l*. per fathom. The 42 end to drive west by six men, at 5*l*. per fathom, and worth about 7*l*. per fathom. The 20 end to drive east by three men, at 30s. per fathom; lode 3 ft. wide, composed of gossan and prian, a fine-looking lode, and a very important point in order to prove our eastern ground, having 200 fathoms of unexplored ground before us. The 10 end to drive east by two men and two boys, at 30s. per fathom; lode 2½ ft. wide, with bunches of copper ore in the gossan.

CWM DWYFOR.—Joseph Jewell, May 11: Stewart's Shaft: The shaftmen are making good progress in sinking this shaft below the 10 by the side of the lode (No. 4 south), which when last taken down was over 2 ft. wide, composed of quartz, iron pyrites, and silver-lead ore—a very strong and promising lode. We are meeting with branches or feeders of lead and quartz in the country rock dipping north towards the lode, so I expect very soon to see the lode more productive.—Level on No. 4 Lode South: In the 10, driving east from Stewart's shaft, the lode is split up, and is all the width of the end, the north part carries a rich rib of silver lead ore. I am expecting to strike the lead on the south side shortly.—Level on No. 3 Lode South: The lode in this level driving east of the south cross-cut is 3½ ft. wide, with a branch of lead and sulphur on the south side 4 in. wide—a kindly lode.—Dressing: The dresser and his pare are preparing another parcel of lead for the market.

CWM ELAN (NEW).—Wm. Goldsworthy, May 6: In the 30 and 20, west of shaft, the men have been driving by the side of the lode since I wrote you last. I will give you the value of the lode when taken down. In the 30 east, on the north lode, we have cut through the cross-course, and the lode is looking very promising; present produce 10 cwts. of lead per fathom. I shall put the men to drive on its course next week. The 30 east, on the south lode, is changing its appearance for lead producing as we get out of the influence of the cross-course. The lode is 14 in. wide, composed of capel and blende ores with a little lead. The end is letting out a large stream of water. All the stopes have improved in value a little during the week.

CWMYSTWITH.—May 10: In Michell's level, west on the new lode, the lode is still 5 ft. wide, composed of clay slate, spar, blende, and lead ore; worth of the latter 10 cwts. per fathom, and kindly for an improvement. The rise in the back of Michell's level, and the winze in the bottom of the Rosa level, both on the new lode, are still poor. No alterations worthy of remark in either of our cross-cuts, stopes, or tribute pitches, since last reported on. All our machinery is in fair working order, and we are pushing on with the dressing of blende and lead ore as fast as possible.

DE BROKE.—N. Bray, May 10: Wilson's engine shaft, sinking perpendicularly below the 25, is rapidly approaching another level, it being now 10½ fms. towards that point where the shaft is expected to meet the lode, and it is intended to sink 2 or 3 fathoms more before driving another level. In the 25 a cross-cut from shaft over this point has been put out northward, proving the lode to be quite 20 ft. wide, the ore-bearing part being on the north wall, and worth from 2½ to 3 tons silver-lead ore per fathom. This course of ore is going down in the sole of the level equally valuable, and no doubt similar results will be met with at the next level. The 25, driving east on the orey part of the lode, will produce 2 tons of lead ore per fathom, and of very fine appearance. The lode in the 25, west of cross-cut, is large and open, containing patches of lead and copper ore, with quartz of a very friable nature, and, on the whole, very congenial for large deposits of mineral when the mine is further laid open in depth. The winze from the shallow adit to the 25 has been communicated since my former visit, and has thoroughly ventilated the mine, thus affording the drivages and other work to be carried out with the greatest economy and dispatch. In the eastern section of the mine, and abutting upon the counter lode, a stope in the back of the 25, on the main lode, is worth from 15 to 20 cwts. lead ore per fathom. In the sole of this level, under this stope, the lode going down is said by miners to be worth quite 2 tons per fathom. The ore ground, as well as the other deposits referred to, will shortly be drained and made available by the drivages at the next level from Wilson's shaft. I may remark, in conclusion, that judging from the very satisfactory manner in which this young mine is being developed, and the discoveries made at the 25, with the almost certainty of soon opening up sections of equal value at least, at greater depth, the property, in my opinion, is likely to enter the Dividend List at no distant period.

EAST BASSET.—R. Pryor, E. Adams, May 9: The lode in the 40, east and west of cross cut, at flat-rod shaft, still retains its value as reported at the meeting of adventurers on Thursday last, and there is no change throughout the mine.

EAST VAN.—Wm. Williams, May 11: The 25, east of A cross-cut, is driven about 12½ fms. by the side of the lode. Tempest shaft is in good course of sinking. We have met with a small string of ore about an inch wide, passing through the shaft—a flier from the lode. A rib of ore simply an inch wide is nothing here and there, but it is a very good indication at this point.

FRANK MILLS.—James Howe, N. Addems, May 10: Setting Report: The Engine-shaft to sink below the 160, by 12 men, at 20*l*. per fathom. We have just pricked into the west lode in shaft, and as far as seen is of a very promising character, and producing lead ore. The 160, to drive north of engine-shaft, by four men, at 3*l*. 15s. per fathom; lode 2½ ft. wide, composed of a beautiful friable quartz, and producing lead ore. We think we shall have a good improvement here soon. The 160, to drive south of engine-shaft on west lode, by four men, at 3*l*. 15s. per fathom; lode producing a little lead. To clear and secure the 145, south of engine shaft, by two men, at 6s. per fathom; we intend commencing to sink a winze in the bottom of this level next week to ventilate the 160 south. The rise in the back of the 72, north of engine-shaft, by four men, at 7*l*. per fathom; lode producing 4 cwts. of lead ore per fathom. We have about 8 ft. more to rise to communicate to the 60, north of boundary cross cut; when completed we shall set some tribute ground here. Winze to sink in the bottom of the 60, north of engine-shaft and south of boundary cross cut, by four men, at 5*l*. per fathom. We hope to communicate with the 72 in two weeks; this section of ground will then be set at a low tribute. We have eight tribute pitches working, by 17 men, at per ton for lead ore—five pitches, by 11 men, at 7*l*. per ton; two pitches, by four men, at 6*l*. 10s. per ton; and one pitch, by two men, at 6*l*. per ton. Machinery and pitwork in good working order.

GAWTON.—G. Rowe, G. Rowe, jun., May 6: The lode in the winze sinking below the 117 fm. level is worth 5*l*. per fathom. The lode in the stopes in the back of the 117 is worth 10*l*. per fm.; No. 2 stope, in the back of the same level, is worth 6*l*. per fm. The lode in the 105 east is producing very strong mundic, with good stones of ore. The lode in the stope in the back of the 105 is worth 6*l*. per fm. The lode in the stopes in the back of the 95 is worth 12*l*. per fm. The lode in the 82 east is 5 ft. wide, of a most promising character, producing arsenical mundic and fine stones of ore. The lode in the stopes in the bottom of the 82 is worth 8*l*. per fm. The tribute department is without change.

GLYN.—James Roach, May 8: The engine shaft is now 7 fms. under the 15. During the week, although still about 5 fms. off the lode, we have found crystallised lead in sinking, which adds additional faith to our previous anticipations of finding rich courses of lead at the 30. The 15 east continues to produce fine stones of lead ore and mixture throughout the width of the level. All the south part of the lode has yet to be explored. Winze sinking under same level is also yielding fine blocks of lead, and has every appearance of improvement as it shall be deepened. In the 15 west, sole of level producing solid stones, and a mixture of lead. We shall sink in this ground this week. The mine is exceedingly promising, and will, no doubt, meet the proprietors' expectations.

GREAT DYLIFFE.—Edward Rogers, May 10: Dyliffe Lode: The shaftmen are engaged connecting the hanging-rods to the balance bob in the 105. In the 120 end, east of boundary shaft, the lode is not quite so rich as it has been, worth at the present time about 12*l*. per fathom. The 105 is driving by the side of the lode, which will be cut into the early part of next month. In the 45, west of winze, the lode is worth 14*l*. per fathom. In the 40 end, driving east, the lode is 2 ft. wide, producing some good stones of lead. There is no alteration in any other part of the mine. We are sampling to-day 100 tons of lead ore, for sale on May 17.

GREAT LAXEY.—W. H. Rowe, May 10: There is no material change to report in the ends and other workings in the lower levels of the deep mine. The lode in the 220 driving north is again offering to become productive. The 210 continues poor. The 200 end is at present worth 50*l*. per fathom. The new winze in the 190, just started to ventilate the 200, is worth 85*l*. per fathom. The new stope is worth 50*l*. per fathom. We shall shortly be in a position to drive this level towards Dumbell's. Two stopes below and above the 145 have fallen off in value, while two others have improved—in one instance worth 80*l*. per fathom.—Dumbell's: The sinking of this shaft below the 200 is proceeding satisfactorily. In the bottom there is a productive lode of the same value as last reported. The 200 south is now being driven fairly upon the lode, worth at present 25*l*. per fathom. A stope north of shaft is worth 30*l*. per fathom. The 200 and 185 ends north are as yet unproductive, but in the 170 the lode has recently become ore bearing, and is now worth 25*l*. per fathom. The various stopes throughout Dumbell's vary in value from 30*l*. to, in some instances, 80*l*. per fathom. The lode in the 140 driving south has further improved, now worth 70*l*. per fathom. A new stope, close to the 110 end north, shows a part of the lode to be going off parallel to the actual forehead containing ore. This is important, inasmuch as the real extent of ore ground here is not yet proved.

GREAT RETALLACK.—J. Harris, May 6: There is no change in the tribute pitches to call for any particular remark since I last reported. The men in repairing the adit level have completed the job about the choke, but there are some repairs to make in the adit on the course of the lode, where some sets of timber have given way, which must be repaired, but I think another week will nearly finish the whole work.

GREAT WEST VAN.—W. Bramwell, May 4: The 46 new cross-cut going south of Eliza's shaft towards main lode is progressing favourably; set to six men, at 8*l*. 10s. per fathom for the month. Two men to stope and rise in the back of new lode at the 34 north cross cut, at 6*l*. 10s. per fathom; this continues a promising lode, and is worth for blende about 15 cwts. per fathom. The 46 west, to four men, at 9*l*. 10s. per fathom; this end is still yielding occasional branches of ore of the same description as we had in the level above before cutting into the great gossan lode. A stope in the back of the 46, to four men, at 4*l*. 10s. per fathom; worth for lead 14*l*. per fathom. Four men busy taking stuff out of the 34 west, and completing pass at the 46 west. I expect to put another stope in working order in the early part of next week, also to sink a winze in a good course of lead about 25 fms. west of the 46 west end. At the eastern part of the sett 16 men have been busy tracing the back of the lode, so as to commence a level close to the brook. The machinery is all working well.

HINGSTON DOWN CONSOLS.—J. Richards, May 11: Bailey's Shaft: In the 160 west the lode is still 5 ft. wide, and produces both a little tin and copper ores, and is promising. In the 150 west the lode is at present disturbed by a small cross-course; it is, however, worth 2 tons of ore, or 8*l*. per fathom. In Rowe's winze, sinking below the 150 west, the lode is 3 ft. wide, and producing saving work of copper ore. The lode in Nicholl's winze, sinking below the 150 west, is worth for length carried (10 ft.) 8 tons of ore, or 32*l*. per fathom. The lode in the stope in the bottom of the 150, west of Rowe's winze, is worth 7 tons of ore, or 28*l*. per fathom. In the two stopes in the bottom of the 150, east and west of Nicholl's winze, the lode is worth on an average 8 tons of ore, or 24*l*. per fathom. In the three stopes in the back of the 150 west the lode is worth on an average 5 tons of ore, or 15*l*. per fathom. In the 140 west the drivage is continued north, but nothing of importance has as yet been met with. In the two stopes in the back of the 140 west the lode is worth 4 tons of ore, or 12*l*. per fathom. The lode in the stope in the bottom of the 120 west is worth 3 tons of ore, or 9*l*. per fathom. In the stope in the back of the 110 west the lode is worth 4 tons of ore, or 10*l*. per fathom.

LADYWELL.—A. Waters, May 11: We have this month set seven pitches to 16 men, at tributes varying from 4*l*. to 5*l*. per ton, inclusive of tramming and filling the stuff. We have to-day sold 20 tons of lead ore for 292*l*. 10s., and shall sell another 20 tons on a corresponding date next month.

MARKE VALLEY.—J. Stenlake, F. Renals, May 5: Setting Report: To drive the 148 cross-cut, south from Salisbury shaft, by nine men, at 30*l*. per fathom. To drive the 136, west on Marke's lode, by four men, at 15*l*. per fathom; worth 1 ton of copper ore per fathom. To stope Marke's lode in back of the 124, by two men, at 3*l*. 10s. per fathom; worth 2½ tons per fathom. To drive the 112 east, on Marke's lode, from cross-cut, by two men, at 8*l*. per fathom; producing good stones of ore, and presenting a promising appearance. To stope Marke's lode in bottom of the 100, by four men, at 5*l*. per fathom; worth 4 tons per fathom. To stope Rosedown lode in the bottom of the 80, by four men, at 3*l*. 10s. per fathom; worth 2 tons per fathom. To stope south part of Rosedown lode in bottom of the 80, by four men, at 8*l*. per fathom; worth 7 tons per fathom. To rise the winze in back of the 70, west on Rosedown lode, by two men, at 8*l*. per fathom; worth 1 ton per fathom. To stope Rosedown lode in back of the 70, by four men, at 5*l*. per fathom; worth 2½ tons per fathom. In driving south from rise in back of the 60, we have not as yet reached the south part of Rosedown lode. To stope Rosedown lode in bottom of the 60, by four men, at 6*l*. per fathom; worth 3 tons per fathom. No. 1 stope in back of the 60, on Rosedown lode, by four men, at 3*l*. 5s. per fathom; worth 4 tons per fathom. No. 2 stope by four men, at 4*l*. 10s. per fathom; worth 4 tons per fathom. To drive the 50 west, on Rosedown lode, by two men, at 6*l*. 10s. per fathom; worth 1 ton per fathom. To stope Rosedown lode in the bottom of the 50, by two men, at 4*l*. 10s. per fathom; worth 2 tons per fathom. To stope Rosedown lode in back of the 50, by six men, at 6*l*. per fathom; worth 3 tons per fathom. To stope Rosedown lode in bottom of the 40, by four men, at 4*l*. per fathom; worth 4 tons per fathom. To drive the 30 west, on Rosedown lode, by four men, at 12*l*. per fathom; worth 2 tons per fathom. The six men engaged in the stope in bottom of the 30, on Rosedown lode, have not yet completed the stripping out of the north side, where the lode will yield 7 tons per fathom. In the stope in the back of the 30, on Rosedown lode, the men (four) are engaged in stripping out the south side; lode worth 4 tons per fathom. To drive the 20, west on Rosedown lode, by four men, at 9*l*. per fathom; worth ½ ton per fathom. To sink the winze in bottom of this level by six men, at 15*l*. per fathom; worth 4 tons per fathom. No. 1 stope in back of the 20, on Rosedown lode, by four men, at 8*l*. per fathom; worth 4 tons per fathom. No. 2 stope by four men, at 4*l*. per fathom; worth 4 tons per fathom. To drive Salisbury adit west by four men, at 14*l*. per fathom. During the past week we have communicated the new shaft to the rise in back of the 10, and hope by the end of next week to be ready to put in footway, &c. A pitch in back of the 112, on Marke's lode, by two men, at 12s. in 1*l*. A pitch in the bottom of the 80, on Fisher's lode, by two men, at 19s. 6d. in 1*l*. A pitch in the bottom of the 40, on Rosedown lode, by two men, at 12s. 6d. in 1*l*.

— J. Stenlake, F. Renals, May 11: The lode in the 20 west has a little improved since last reported, now worth 1 ton of ore per fathom. The winze in bottom of this level is holed to the stope in back of the 30. All other points of operation without change.

MONYDD GORDDU.—R. Rowse, May 10: The different points at work continue of the same value as last reported. The stuff from the drift and stope is cleared, stull being put in, drift going at 6*l*. per fathom, and the stope will soon be resumed at 3*l*. per fathom. The water is getting short, but the mine, on the whole, looks better, and with a full supply of water we should soon be in the market with another sampling of both lead and blende.

NEW CHIVERTON.—J. Trewartha, May 11: Sinking the engine-shaft below the 50 is being carried on with all possible dispatch, and favourable results are anticipated, both in sinking and in the production of the lode. No change to notice in any other part of the mine since last report.

NEW CONSOLS WORKS.—R. Pryor and Son, T. Jenkin, H. Vial, May 10: There is no change to notice in any of the stopes since our last report. The engineers are getting on well with the erection of the Oxlands calciners, and all other new work, including buildings, &c., is progressing rapidly. We shall ship 21 tons of copper precipitate, ex Gazelle, at the latter end of the week.

NEW HENDRA.—Wm. Rowe, May 8: Pay and Setting Report for the 6th inst.: The deep adit set to drive by six men, for the month, at 8*l*. per fathom; the lode is a little larger than usual, producing stones of copper ore.

NEW ROSEWARNE.—E. Hosking, W. Bennetts, May 6: Setting Report: To drive the 67, west of Pool's shaft, by six men, at 6*l*. 10s. per fathom; the lode is 2½ ft. wide, worth for copper ore 6*l*. per fathom. We have suspended the stope above this level, and set the ground on tribute. To drive the 58 west of Pool's shaft, by two men, at 4*l*. per fathom; the lode is 3 ft. wide, composed chiefly of quartz and mundic, with a little copper ore, and letting out a good deal of water. To drive the 46 west of Pool's shaft, by two men, at 2*l*. 15s. per fathom; the lode is 1 ft. wide, producing a little ore, but not sufficient to value. There are also three pitches working by nine men, at an average tribute of 11s. 6d. in 1*l*.

NEW ROSEWARNE.—E. Hosking, W. Bennetts, May 11: The different bargains throughout the mine are looking much the same as when reported on Saturday last.

NEW TYLLWYD.—J. Paull, May 11: The lode in the 30 west cross cut is 5 ft. wide, composed of clay-slate, carbonate of lime, spar, and lead ore, yielding of the latter from 15 cwts. to 1 ton per fathom, and bids fair for further improvement as we proceed westward. Set to six men, at 6*l*. 10s. per fathom, and clear their own stuff. All surface and underground machinery in good order and going well.

NORTH LAXEY.—R. Rowe, May 9: In viewing the mine to-day there is nothing to report since my last. The lode in the north shaft is quite 4 ft. wide, and chiefly composed of quartz, containing lead, blende, and copper. We cannot value the lode for lead, but the stuff has to be saved for the washings. The shaft will be completed to the 136 by the end of this week, and on Tuesday I expect the men will be ready to commence driving out a new level north and south on the lode, which I hope and expect will lead to some good discoveries; looking, however, at the present size and appearances of the lode in the bottom, I would strongly urge a resumption of the shaft as soon as possible below the 136. It seems to me that we have at last got down into a large and settled lode, and also into a change of rock more favourable for bearing lead in steadier and larger quantities than known or seen in the mine before. There is nothing new to report of the 84, and the stopes are about the same in value as for some time past.

NORTH TRESKERBY.—R. Pryor, May 9: The tutwork bargains throughout the mine continue just as when reported on for the meeting of adventurers on Friday last.

OLD TREBURGETT.—W. Hancock, W. T. Bryant, May 11: In the 90, south of the shaft, we are driving on the east part of the lode, and shall continue to do so until communicated to the No. 2 winze, which is now about 7 fms. under the 80, and which we are preparing to sink again. In the 80 south we have commenced taking down the lode; so far as we can see it is worth 10*l*. per fathom. We have set a stope behind this end, and shall clear out stuff and put in railroad close to end, so as to push it ahead as fast as possible. Two or three of the tribute pitches have improved. We sold to-day two parcels of ore. No. 1, computed 21 tons, at 27*l*. 1s. 6d. per ton; No. 2, 10 tons, at 19*l*. 17s. 6d. per ton.

PARYS MOUNTAIN.—T. Mitchell, May 11: There is a change taking place in the 90 cross-cut south the ground is beginning to have a lodey appearance, with water issuing strongly from the forebreast. The 90, east of engine shaft, is producing good patches of copper ore, but the ground continues rather hard for driving. The 65 west is going forward in a strong lode, showing a little sulphur and copper, but not enough of the latter to value. The 45 east continues to look well, yielding from 5 to 6 tons of copper ore and 2 tons of sulphur per fathom. The 45, east of trial cross-cut, is producing a little copper ore, and opening up tribute ground. The 30 is going forward in easy ground, and good progress is being made in the driving. Some of the stoping points have improved lately. We intend sampling next week two lots of copper ore, of better quality than last.

PATELEY BRIDGE.—C. Williams, May 11: In the Lumb vein in the south cross cut at the 10 we have broken some excellent ore during the week, and the vein in the end going east is regular and well defined, the leading part of which is from 4 to 5 ft. in width, filled with gossan, barytes, and lead ore, yielding of the latter 1½ ton per fathom.—Gulf: This vein is 10 ft. in width, yielding ore throughout, worth 13*l*. per cubic fathom. In the west cross cut in the 20 the ground is favourable to work, and the men are making fair progress. We are now close upon the Gulf and Lumb veins, and I have no doubt a good discovery will be made in this direction. In the east cross cut, also in the 20, I am glad to be able to inform you we have just cut into Fielding's vein, and so far as seen it contains some nice solid ore in paying quantities, and as soon as the ground in the end is squared

up we shall drive north-west on its course, and develope the rich course of ore that went down in the sump in advance of our drivage.—Engine-Shaft: This shaft is in regular course of sinking under the 20, and is down 8 fms. 6 in.; the ground in the bottom is strong limestone formation, congenial for lead ore.—Pringap: The vein in the end is 5 ft. in width, composed of fine quartz, blende gossan, and lead ore, yielding of the latter 1 ton per fathom.—Gillfield: The shaft sinking on Sun vein is being pushed forward as fast as the nature of the ground will admit; the vein is being pushed forward as fast as the nature of the ground will admit; the vein in the bottom is 6 ft. in width, worth 12l. per fathom for lead ore. The stope in the back of this level is worth 17l. per fathom for lead ore. Crushing and dressing ore is being proceeded with regularly.

PEDN-AN-DREA UNITED.—Wm. Tregay, W. Prideaux, J. Pope, May 6: Sump: In the 160 west end the lode (Martin's) is worth 10l. per fathom. In the 140 west end the lode (Martin's) is worth 8l. per fathom.—Cobbler's Shaft: The lode here sinking below the 130 is worth 10l. per fathom. In the 130 west end the lode (Martin's) is worth 12l. per fathom.—Cardozo's: In the 100 fm. level west end the lode (north) is worth 9l. per fathom. In the 100 fm. level west rise the lode (north) is worth 9l. per fathom. In the 90 west end the lode (north) is worth 18l. per fathom. In the 80 west end the lode (north) is worth 12l. per fathom. In the 60 west end the lode (north) is worth 8l. per fathom In the 55 west end the lode (north) is worth 7l. per fathom. In the 47 west end the lode (north) is worth 10l. per fathom. There are no other changes to report.

PENHALLS.—S. Bennetts, W. Higgins, May 6: There has been no lode broken in the 70 west end since last reported on. In the 70 east, on the Downright lode, there is bt little change to notice. The 60 east is improving, the lode is getting wider, and at present is worth 12l. per fathom. The same level west from the east cross-course is worth 10l. per fathom. In the 50 north cross-cut there has been no further lode discovered since passing the one noticed last week, which is from 6 to 9 in. wide, and containing some good tinstuff. The 45 west is worth 6l. per fathom, and the 45 east 1l. per fathom.

PENNERLEY.—W. T. Harris, J. Delbridge, May 10: There is no particular change in the mine since last week. We have commenced sinking a winze below the 70 east, on Warm Water lode; we will give you the value of the lode in our next report. We have also commenced a cross cut at the 25 to prove the ore ground now being worked on tribute in the back of the 35 on the gossan lode; we expect to cut the lode in about 6 ft. driving. To-morrow we shall sell 80 tons of lead ore.

PENSIRUTHAL.—W. Teague, May 4: In Highburrow shaft, sinking under the 58, the lode is of a most promising appearances, and worth for tin 8l. per fm., with every indication of an early improvement. In the 58, driving west of Highburrow shaft, the lode is worth for tin 5l. per fathom. In the 58, driving east of Highburrow shaft, the lode is a little disordered in consequence of nearing the horse of granite, where the copper branch forms itself, and in 2 fathoms or 3 fathoms driving the copper lode will show itself, when, judging from the appearance seen in the level above, we may fairly expect a good improvement for copper. In the 46, driving west of Highburrow shaft, the lode is showing a much better appearance, and is worth for tin 8l. per fathom. In the 46, driving east, the lode is worth for tin 10l. per fathom. The driving east on the copper lode will be resumed in course of a week or two from this date. In the 34, driving west of Highburrow shaft, the lode is yielding saving work for tin. The 34 is suspended for the present, and the men put to sink a winze under the level to ventilate this and the 46 under it. In the 22, driving east of Highburrow shaft, the lode is producing rich stones of tin. In the 22, driving west of Highburrow, the lode is producing saving work for tin. We shall commence to drive the 10 west from Middle shaft in course of a few days. It has taken a little longer to secure this shaft than I expected. We shall sample a parcel of copper ore during this month, and sell a parcel of tin to morrow.

PERSEVERANCE.—William Rich, William Hambly, May 10: In the 70 cross-cut north we have intersected a small branch dipping north towards the main lode; the ground is easy for driving, and good progress is being made. We have begun to drive east and west of the engine-shaft at the 82, with six men in each end. The lode in the 82 east is about 4 ft. wide, carrying a little tin. In the 82 west the lode is 3 ft. wide, of a very promising appearance, and letting out water freely. We hope soon to drain the Clyjah part of the mine.

PORT NIGEL.—J. Manley, May 6: I am glad to inform you that we have cut into a splendid branch of lead ore in the 56 east, and on the north part of the lode we can now see it for 18 in. wide, almost solid, and no sign of the north wall. We have taken out to day lumps of solid lead, over 56 lbs. in a lump. I have the men now clearing the debris from the end, so as to keep the lead separate, and shall be able to report as to its value on Tuesday next, when we shall have cut further into it. No other change.

— May 10: I am pleased to say the lode in the 56 east continues to open out splendidly, being large and well defined, its matrix being quartz, oxide of iron, copper, blend, and lead ore; worth for the latter 25l. per fathom. It has a fine appearance and there is every probability of our having a good run of ore ground at this point. The lode in the 68 east is more defined, containing spots of copper and lead ore of a very promising character. The 68 west is yielding stones of lead ore. We have two important points here, and a good discovery is early anticipated.

PLYNLIMMON.—J. Garland, May 9: The deepening of the new shaft below the 24 is being carried on without hindrance, and is slowly progressing towards completion to a 36, being now down 10 fms. 5 ft.; the footwall of the lode continues its rather rapid underlie north, which makes sinking spare and troublesome, as the men have to keep continually cutting into the hanging side. As before stated, I deem it advisable to leave all the lode standing, fearing an influx of water therefrom. The 24, east of new winze, is now in the cross-course, or slide; the lode during the past few days has been small and irregular; it is now again opening out, and produces splendid stones of lead ore, worth 1½ ton of lead ore per fathom. I may here remark that at a careful estimate this level has laid open available for stoping at least 40 tons of lead ore during the past month; it is now a very promising end for an early improvement on its present produce. The stope over this level, 20 fms. east of Hughes' winze, having become poor in the back, is suspended, and the men placed with those stoping east of new winze, where the lode produces fully 1 ton of lead ore per fathom. In the stope below the 12, east of cross course, the lode has improved; the present yield is 1½ ton of lead ore per fathom. Taking the mine on the whole, I am much pleased in being able to congratulate you on its improved prospects during the past month. At surface the fine weather enables the carpenter to make good progress in preparing the pulley-stands, &c., for new line of rods. I am daily expecting the iron for the smith to commence putting them together. Although the weather has been and continues very dry, we have still a good supply of water in our reservoir; it is a great loss to us that we have not another to assist our present one, which is very small. Drawing and dressing are being pushed on as fast as possible, preparing for the sampling of another parcel of lead ore. The machinery throughout the mine, including pit-work, is all in good working order.

PRINCE OF WALES.—J. Andrew, J. Pryor, May 10: The ground in the 77 cross-cut north is a little more favourable for driving. In the 55 west we continue to drive by the side of the lode, but shall begin to take it down in a day or two. The lode in the 45 west is large, and continues of a very favourable character, yielding saving work for copper ore.

RELISTIAN CONSOLS.—J. Curtis, May 11: Setting Report: Duke's shaft to sink below the 24, by six men, the month, at 16l. per fathom. On the north or footwall we have a branch or leader 1 ft. wide, with good stones and branches of yellow copper ore in it. No south wall has been seen below the 10.

ROMAN GRAVELS.—A. Waters, May 11: The mine throughout is looking quite up to the values put on the various ends and stopes, &c., in my setting report of last week. We hope to commence winding from the 95 through the new south engine shaft next week. We have to-day sold 20 tons of lead ore, realising 299l. The masons are getting on with the new engine house, &c.

ROOKHOPE.—James Blenkiron, May 9: We are proceeding favourably with cutting out for water storage at the foot of the shaft, and hope to complete the same by the end of this week, then commence clearing out the 42, and push forward the same with all possible dispatch. We have made communication between the 15 and forehead of adit, which has nicely ventilated that part of the ground, and are pushing forward the adit level by four men, which is about 40 fms. short of boundary, worth 30 cwts. of ore. I have arranged for four men to continue the rise close to the adit forehead up into top sills, which are whole. About 2 fms. further east we have another rise up 3 fathoms from the 15, which we purpose continuing as high as the adit. We have also arranged to commence another rise close to the boundary from the 15, which will lay all this part of the ground thoroughly open for stoping; I think it is worth on an average over 20 cwts. of ore per fathom, and will cost (after being laid open by rises, &c.) from 20s. to 30s. per fathom stoping. We have also made a communication between the 15 and 25 close to the boundary, where we have some good stopes at present standing, as we have a large quantity of bouse or orestuff broken in this part of the mine, which we sent out to the dressing floors. We have about 15 tons of ore in the bin, and hope to have 25 tons ready for market by the 16th inst. I have not succeeded in meeting with a good ore dresser yet, but hope to do so soon. Dressing is a very important part of our work, having a good quantity of orestuff on hand, and the ground favourably laid open for stoping. I told Brown no time must be lost on dressing-floors.

ST. PATRICK.—Wm. Francis, May 10: It gives me great satisfaction to report a very important and favourable change which has taken place in the 120 yard north cross-cut, having broken into a fine cross-course of the most congenial character for intersecting the lead-bearing main lodes, and bringing very speedy ground for driving, being now set at 8l. per fathom in the place of 12l. paid hitherto. We find also in it a good sprinkling of lead ore, with clays, tufty stones, and gossans, and the appearances here are more encouraging than they have ever been. The 60 yard cross cut, north in the chert, is also progressing very satisfactorily, being let at 52s. 6d. per fathom, in as fine bearing chert measures as can be seen anywhere in the district. The 90 yard north cross-cut is let at 8l. per fathom, without change to note.

SOUTH CARN BREA.—William Rich, James Knotwell, May 10: The 175 west is in a hard bar of ground; the lode is large, and carries spots of copper. The lode in the 164 west is letting out more water than usual, and carries stones of rich grey copper. We have suspended the rise in back of this level, as the ground is hard and the lode poor. The men are now employed driving cross-cuts north and south in the 164 east. The 164 east carries good stones of tin and copper. The stope below the 150 east is worth 10l. per fathom. The stope in back of the 130 east is worth 6l. per fathom.

SOUTH CONDURROW.—Wm. Rich, W. Williams, Henry Abraham, May 9: The lode in the 93 east is worth 8l. per fathom. The rise in the back of this level is worth 12l. per fathom. The 93 west is worth 10l. per fathom. We have intersected the cross course in the 82 east; the lode in this end is worth 15l. per fathom. We shall soon begin to sink a winze in this level near the cross-course to meet the rise below, and for ventilation. The 82 west is worth 8l. per fathom. The 70 west worth 7l. per fathom. The 60 west is worth 10l. per fathom. The 50, east on Fraser's lode, is worth 6l. per fathom. The 50, east on the great lode, is worth 8l. per fathom. The 50 west is worth 10l. per fathom. The ground is favourable for sinking at the boundary shaft, and the lode more settled and regular as we sink.

SOUTH ROMAN GRAVELS.—John W. Powning, May 11: Shelfield: We have lowered the water 4 fms. below the 20, and shall have the mine in fork by the time I calculated—next Monday—which will be four weeks from the time of starting the engine. We shall then start to cut cistern-plat, and make other preparations for the new 10-in. lifts, which we shall fix as fast as possible.

SOUTH TOLCARNE.—J. Vivian and Son, J. Paull, May 11: The engine shaft is now about 9 fms. under the 40, where the granite is a little harder than it has been.—Fraser's Lode: In the 40, east of engine shaft cross-cut, the lode is more than 6 ft. wide, but how much more we cannot yet tell. The part we are driving in is worth fully 12l. per fathom. In the same level west the lode is 2 ft. wide, and worth about 3l. per fathom. We have commenced stoping the back of the 40, east of the winze recently communicated from the 30, where the lode is worth 5l. per fathom for a width of 1½ ft., the price for stoping being 25s. per fathom, and 1s. in 20s. tribute.

SOUTH WHEAL FRANCES.—A. T. James, May 6: Pascoe's shaft is 12 fms. 4 ft. below the 185, and is being sunk by twelve men, at 31l. per fathom; the lode is about 2 ft. wide, producing stamping work. The rock being hard elvan, our progress is slow, but we expect to sink shrough it shortly, and get into a more favourable rock for progress. The 185 cross-cut is driven north 27 fathoms; the last 4 fathoms in the flat lode, and there are no signs of the north wall yet. This level is being driven by six men, at 20l. per fathom, and is worth 5l. per fathom. The 185 is being driven east of cross-cut by six men, at 12l. per fathom; the part carried is 6 ft. wide, and worth 5l. per fathom. We anticipate an improvement in driving a few fathoms further east.

TANKERVILLE.—Arthur Waters, May 11: Setting Report: Watson's engine-shaft to sink below the 167 fm. level, to be carried 12 ft. long by 6 ft. wide, within timber, by nine men, at 25l. per fathom for the whole depth required to reach the 180. The 167 to drive west of shaft, by six men, at 16l. per fathom: the lode is 8 ft. wide, worth 100l. per fathom. A new winze to sink below the 167, east of shaft cross-cut, by four men, at 15l. per fathom; the lode is worth 60l. per fm. The stope in the 167, east of cross-cut, by six men, at 7l. per fathom; worth 60l. per fathom. No. 1 stope, in the said level, west of shaft, by six men, at 7l. per fathom; the lode is worth 60l. per fathom. No. 2 stope, west of ditto, by six men, at 7l. per fathom; the lode is worth 60l. per fathom. No. 3 stope, in bottom of the 152, east and west of winze, by twelve men, at 7l. per fathom; the lode is worth 90l. per fathom. The stope in the 130 west, on the south lode, by six men, at 7l. per fathom, worth 30l. per fathom. No. 2 stope, in the same level west, by four men, at 7l. per fathom, worth 25l. per fathom. The 120 to drive west, on south lode, by four men, at 12l. per fathom; the lode is worth 10l. per fathom, and improving. The stope in back of the 102, west of shaft, on south lode, by four men, at 7l. per fathom, worth 30l. per fathom. The 92 to drive west of shaft, on said lode, by four men, at 13l. 10s. per fathom, worth 30l. per fathom. The 92 cross-cut, east of shaft, towards the old mine north, by four men, at 12l. per fm. The stope in the 82 east by four men, at 6l. 10s. per fathom, worth 30l. per fathom. The 74 to drive west of shaft, by two men, at 9l. per fathom; the lode is at present not to value. The stope in back of the said level, west of shaft, by four men, at 7l. per fathom: the lode is worth 15l. per fm. We have to-day sent out samples of 150 tons of lead ore, for sale on the 18th inst.

TEMPLE.—May 5: The lode in the adit level west is still looking well, producing blende spotted with copper and lead ore, the best of which is being saved. Samples of the blende from the forebreast of the level, and of the lead from the winze, have been forwarded to the London office. The lode is now going in the same direction as when the first body of lead ore was driven through, and it is anticipated another course of lead ore will soon be found, as everything indicates its proximity. There is no sulphur whatever, either in the winze or level.

TREBEIGH CONSOLS.—J. Gifford, May 11: We are getting on with raising stone, and building the engine-house with all possible speed.

TRELEIGH WOOD.—E. Hosking, W. Goldsworthy, May 11: The different bargains are looking much the same as reported on Saturday last.

VAN CONSOLS.—James Roach, May 8: We have had no alteration here since my last weekly advice. We shall sample a parcel of lead ore (25 tons) on Wednesday next. Machinery all in good order, and working well.

VRON.—S. Harper, May 6: In the past week we have been clearing the stuff from the 60 yard level west by six men. About a fortnight since we could draw ourselves through over the stuff, but since then the roof timber has given way further on than we knew of. We shall have a load of timber on the mine next week, and will get the level cleared as soon as possible, as there are men waiting to go to work in this level on tribute. The water is falling back slowly. The North Hendre Mine Company is driving the deep adit level on the north and south lode, towards our mine, by four if not six men.

WEST CRAVEN MOOR.—D. Williams, May 6: Herewith you will receive the setting report of the above mine, as under:—Six men to drive Blackhill adit level east, at 120s. per fathom, including tramming the stuff, &c.; the lode here has improved during the last few days, and is fully 2 feet wide, chiefly composed of barytes and gossan, and producing saving work for dressing. The cross-cut south to the parallel lodes, to four or six men, at 130s. per fathom. In the forebreast we have driven through another flatting bed, showing spots of lead ore. The second lode in new east shaft is between 2 and 3 ft. wide, worth from 20 to 25 cwts. of lead ore per fathom; I have set a full pare of men to drive east and west upon the same at 135s. per fathom. Four men to drive the cross-cut south to cut Harker's and other lodes, at 160s. per fathom; judging from indications on surface I expect to cut the third lode this month. Two men to drive the 11, north-west upon No. 1 lode, at 90s. per fathom; the lode is worth 15l. per fathom, and promising for a further improvement. Four men to drive east in bottom of the west shaft; the lode is worth 12 cwts. of ore per fathom. Four men to drive west, at 130s. per frthom; lode 2 ft. wide, producing good leadstuff. We have during the last fortnight dressed 12 tons of lead ore, and have carted some to the metal house. Good progress is being made with building the new bouse teanes (passes for washing, &c., the leadstuff), and as soon as these are completed we shall commence stoping the ore ground in the new east shaft. The new winding-engine from Messrs. Robery and Co. is ready for working; we have erected the head gear and pulling stands at west shaft, and shall be ready to draw from both shafts next week. I have also let two metal pitches on surface at 52s. and 56s. per bing, including raising and dressing (2½ bings to a ton).

WEST EAGAIR LLE.—John Davis, May 10. I have no change to report this week, except at the cross-cut (10 fm. level west), where we have cut some fine ribs of blende, intermixed with copper. The lode here is very wide, and in two sections—one carrying lead ore and the other blende and copper. The machinery is in good order, and in full work.

WEST GODOLPHIN.—John Pope, May 10: Wilson's: In the 60 driving west the lode is 4 ft. wide, worth 20l per fathom, producing tin and copper; this is for the width carried. The 60 driving east is 3 ft. 6 in. wide, worth 5l. per fathom for tin. The 50 driving west is 3 ft. 6 in. wide, worth 20l. per fathom for tin. The 50 driving east is 3 ft. 6 in. wide, worth 5l. per fathom for tin. The 40 winze west is 2 ft. wide, worth 4l. per fathom for tin, and improving in appearance. The 40 driving east is 3 ft. wide, low priced tinstuff. The 30 driving east is 1 ft. 6 in. wide, low priced tinstuff. The adit level sinking at Boulton's shaft is small. The middle adit driving west is 1 ft. 6 in. wide, low priced tinstuff. The other parts of the mine are just as last reported. I calculate that we shall get the boiler for the stamping engine in its place to-day.

WEST MILWR.—Wm. Francis, May 10: The main vein in sinking under the 70 yard level continues of great strength of character, and of promising indications, the underlie being still fast southward. I am in daily expectation of reaching the first run of orey ground, which, judging from what is now seen, will be valuable.

WEST TANKERVILLE.—A. Waters, May 11: Setting Report: The 75, to go north and south of boundary shaft, by six men, at 13l. and 12l. per fathom respectively: the lode in each end is of considerable strength and character, yielding good stones of lead, and improving, especially southwards. The 63, south of the shaft, by four men, the month, at 11l. per fathom; the lode is worth 1½ ton of lead ore per fathom. No. 1 stope, in the said level south, by four men, at 5l. per fathom; lode worth 2 tons per fathom. No. 2 stope, south of ditto, by two men, at 4l. per fathom; the lode is worth 1 ton per fathom. No. 3 stope, by four men, at 4l. per fathom, worth 1 ton per fathom. No. 4 stope, by four men, at 4l. per per fathom, worth 1½ ton per fathom. The 50 to drive south-east towards No. 2 cuunter, by four men, at 10l. per fathom, yielding stones of ore. No. 1 stope, in the said level south, by two men, at 4l. 10s. per fathom, worth 2 tons per fathom. No. 2 stope, south of ditto, by two men, at 4l. 10s. per fathom, worth 1½ ton per fathom. The operations in the old mine were suspended by a resolution of the board of directors on April 5 last, and I can only say that they were suspended accordingly. We have to day sold 25 tons of lead ore and 20 tons of blende, for 488l. 12s. 6d.

WEST WHEAL TOLGUS.—May 10: There is no alteration in the 135 since our last report, as there has not been much done on the lode. There has not been anything done in the winze (first winze) under the 125 since last reported on, the water being in the bottom level so much makes it expensive to be drawing out when there was but little chance of continuing to work; it is now out and the men have commenced to sink again, and we hope to be able to continue to get it down a fathom or two more; when the end in the 135 gets under it we can rise to meet it much cheaper than by sinking. We put the first winze men to begin to sink a second winze about 10 fms. further west, whilst the water was in the first; it is down 4 ft. in a lode 7 ft. wide, yielding 12 tons of good ore per fathom. The lode in the 125 west is small and poor. The lodes in the 115 and 105 ends are the same as last reported, both poor. The lodes in the 15 end is 4 ft. wide, yielding 2 tons of ore per fathom; a very kindly end. The lode in the 85 west is speedier for breaking, and yielding good stones of ore, with plenty of mundic; a very kindly end also. Richard's shaft-men have cased and divided the shaft down to the 85, so that we are now drawing from that level with the steam whim. The shaft men are cutting a flat to bottom. The lode in the 75 end west is large, all the width of the end, and yielding good stones of ore and improving. The lode in the 65 and 55 west is still poor. The stopes are looking just as usual, quite up to former reports. We are pushing on as fast as possible with the dressing.

WHEAL CREBOR.—J. Andrews, May 9: The lode in the 48 east has improved, and is now worth 10l. per fathom. No. 1 stope, in the back of the 48, has also improved from 10l. to 15l. per fathom. No other change.

WHEAL CREBOR.—J. Andrews, May 11: In the 120 we have for some considerable time been driving east on a wall somewhat similar to that we drove on in the 108 east before it reached a large lode; but, as the lode is still small, I have put the men to drive south to prove whether the main part of the lode is in that direction. The lode in the 108 east is 3 ft. wide, of quartz, capel, mundic, and a little yellow copper ore. The lode in the 72 east is 4 ft. wide, of a very promising character, and letting out a large stream of water, but as yet is unproductive. The lode in the 48 east is 6 ft. wide, 2 ft. of the north part of which is worth 10l. per fathom, and looking promising for further improvement, as the orey part appears to be opening out wider as it goes east. The lode in No. 1 stope, in back of the 48, is 8 ft. wide, worth 15l. per fathom. The lode in No. 2 stope, in back of the same, is 6 ft. wide, worth from 35l. to 40l. per fathom—a fine course of ore. We have now on the floors dressing towards next sampling about 110 tons of good quality ore, and hope to get from 200 to 250 tons by the end of three months, besides 70 to 80 tons of mundic, which will leave a good profit on the quarter. I am pleased to say that, on the whole, the mine is looking very well.

WHEAL GRENVILLE.—T. Hodge, May 9: The 160, east of the western shaft, is worth 6l. per fathom. The 160 west end is worth 6l. per fathom. The 150 east end is worth 9l. per fathom. The 130 east end is worth 12l. per fathom. The 130, east of the north shaft, is worth 8l. per fathom, and promising to improve. The 130 east, on the old lode, is producing low price tinstone. In the 140 north cross-cut we are making fair progress. The stopes generally are yielding fair quantities of tin. Our surface work is being pushed on as fast as possible.

WHEAL KITTY (St. Agnes).—S. Davey, Richard Harris, May 6: New Shaft—Pryor's Lode: The ground in the 154 cross-cut, driving north of shaft, is composed of capel, interspersed with blende and mundic, and letting out water freely; these combined we consider are good indications for the production of tin when the lode is reached. The lode in the 142, driving west of shaft, is 2½ ft. wide, worth for tin 11l. per fathom. The lode in the 142, driving east of shaft, is worth for tin 7l. per fathom. The lode in the 130, driving west of shaft, is worth for tin 18l. per fathom. The lode in the 118, driving west of shaft, is worth for tin 8l. per fathom. The lode in the winze sinking below the eastern adit is at present disordered by a slide. The lode in the 90, driving east of engine-shaft, is worth for tin 7l. per fm. No lode has been taken up in the 100, west of engine shaft, since last report.

WHEAL MARY HUTCHINGS.—H. Miners, May 10: Since my last report, I am pleased to say, we have a further improvement in the 32, east of the engine-shaft; the lode is from 2½ to 3 ft. wide, composed of peach, spar, and mundic, producing from 10 to 12 lbs. of tin to the ton of stuff; this is a great improvement, as the lode for the last 20 fathoms driving has been small and worthless, and we have not reached the point where the tin made in the level above by 10 fathoms. This, I think, speaks well for meeting with tin in the 32. The new south, or Hemerdon, lode has also improved in quality, although it is not as large as it has been, still I believe from the appearance of the ground, which has very much improved, it will soon resume its size, and again become very productive. All the other parts of the mine are looking much the same as last reported on.

WHEAL UNY.—W. Rich, M. Rogers, May 6: The ground in Hind's shaft is hard, but we are cutting down this shaft by 12 men as fast as possible. The lode in the 150 end, west of incline shaft, is worth 10l. per fm. The 150 east yields a little tin. The 140, east of King's, is worth 10l. per fm. The 120 east is worth 10l. per fm. A rise in the back of this level is worth 8l. per fm. The 110 end east is worth 8l. per fm. The winze in the bottom of this level is worth 10l. per fm.

PANICS—THEIR CAUSE AND EFFECT.

Under this title Mr. E. J. BARTLETT, of Great St. Helens, has issued a new edition of his pamphlet "How and When to Invest." He states that the inflated prices and fictitious prosperity which always precede a storm has placed trade on a false basis, and the question may well be considered whether a return of the normal condition can be expected from one of those terrible financial collapses which the world has been accustomed to see and feel at different periods. He observes that to the public generally 3, 4, or even 5 per cent. are not a sufficient return for money invested, and there can be no doubt but that by careful selection, and by spreading the risks over a sufficiently wide basis, much larger interest may be obtained with every condition of the most perfect safety. All securities must, however, be affected by the condition of the money market, and are subject to certain fluctuations not so much dependent on their own intrinsic value as on the purchasing power of the people. It sometimes, therefore, happens in moments of general depression that they fall very considerably, and are difficult of sale. For this reason Consols, or other such stocks, which do not suffer equally, and may be at once converted into money, are more suitable for a certain class of investors. This class, however, is always limited, and with the daily increasing costs of living must become more so, as, to meet their wants, investors must get a higher rate of interest.

The attractions of Colonial Government Securities are fully discussed, Mr. Bartlett remarking that colonial municipal loans may be pointed out as offering a good and safe form of investment. The objects for which they are raised being for purposes of public utility in cities and towns which are daily acquiring increased importance, the security may be regarded as of a very high class. This is particularly the case with the loans contracted by different cities in the dominion of Canada, and which are usual y quoted at a premium. The similarity of the laws in our colonies with those of the Mother Country, and the punctuality with which the Colonial Governments and municipalities have always met their engagements, make these descriptions of securities a very eligible kind of investment to a large number of investors. Referring to Foreign Bonds, he states that a great feature of security has been brought into the foreign bond market by the formation of the Council of Foreign Bondholders, which carefully watches the monetary operations of each country, and keeps exact accounts of all their transactions. It is, consequently, able to give the most reliable information respecting the finances of all countries. The value of this institution can scarcely be over estimated.

Railways, joint stock banks, and telegraphs, are next referred to, and Mr. Bartlett then directs attention to coal and metalliferous mining enterprises. With reference to collieries, he directs special attention to the properties of the Llay Hall Coal, Iron, and Fire-brick Company, and of the Mold Argoed Company, whilst in connection with metalliferous mining, he gives equally complete details as to the Denbighshire Consolidated, Gorsedd and Merllyn Consols, Pennant Lead and Barytes, and other mines. In conclusion, Mr. Bartlett explains that his desire has been to afford to each class of investors the most reliable information respecting the peculiar description of security which is best adapted to meet his wants. Thus, to the trustee, who holds funds for the benefit of others, and to whom security is rather an object than large returns, home Government stocks or railway debentures are certainly the most eligible investments. In some cases they are, indeed, prescribed by the conditions under which the money is held. Where, however, a wider margin of discretion is left, he has endeavoured to point out the many means which exist of placing money at once safely and profitable, and where the use of common sense and prudence is alone required to secure these valuable results. For the more speculative investor he has attempted to show how he may secure large returns without running any immediate risk. He explains that well selected colliery and mine shares will pay splendid dividends, but not if rushed into recklessly; and, in view of the present condition of the market, points out that if caution only be exercised, a judicious outlay now will almost doubled be by the certain advance in prices of any securities possessing merit. The book has been carefully compiled, and is both interesting and instructive.

THE WEEK.

SATURDAY, MAY 6.—After a fitful rally in Egyptians, all the issues finally closed at a decline, on a rumour that the French scheme with all its objectionable features is to be adopted in its entirety. If (say) 5 per cent. could be guaranteed beyond all doubt to the bondholders they would gladly accept it and forego the drawings, but this does not suit the views of the Credit Foncier and other financial houses in Paris, who hope by securing specious terms to be able to unload before the bubble bursts the tons of Egyptain paper they have stowed away in their cellars. At present bills accepted by the Government of the Khedive are unsaleable at 25 per cent. discount. The last price of the 1873 loan was 43 to 43¼. In railways, beyond a rally in Caledonian, Metropolitan, and Dover A, every disposition was shown to take profits on yesterday's rise, fearful that it would not last long, and at the close dulness reigned all round. York A and Berwick fell ¾ per cent., Great Western, Midland, and Sheffield ½ per cent., with every appearance of a further drop on Monday. Great as has been the fall on the heavy lines lower prices must be accepted to tempt *bona fide* purchases. Anglo-Egyptain Bank rose 1l., 15l. to 17l., but Railway Share Trust fell to 6¾, and Debenture Trust to 7¾. In mines, Pateley Bridge were dealt in at 4¼; United Mexican fell to 2¼; Wye Valley called 7 to 8; and Grogwinion, 6 to 7.

MONDAY.—Some disposition was shown at first to buy Egyptians at 44¼, but it did not last, the closing price showed a fall, being 42½ and 42¾. The French arrangement to swell the whole debt to 91,000,0000l., to be redeemed in 65 years, cannot be considered other than as visionary, and must arouse fresh distrust. All Turkish stocks fell, on fears of complications with France and Germany, arising out of the outrage at Salonica. The Fives fell to 12¼. Portugese had for them a serious drop of ½, to 53½, on sales from Lisbon, where a small panic prevails. The most important changes were, however, in home railways, and were all adverse. Midland and Berwick fell 2¾ per cent. to 128, and 148 respectively. Sheffield dropped 1¾, to 62½. The fall in Caledonian and North British was over 1 per cent. Foreign railways, too, were dull, Lombards being 7⅛, and Bolivar, 4½. Tasmanian Debentures, 50 to 55. Eries, 13½ to 13¾. Anglos were 59⅝ to to 59⅞; and Directs, 7¾, a rise of 5s. Australian Agricultural 87 to 89. London Tramways, 6¾ to 7¼. Eley Brothers, 23 to 24. The business in mines consisted mainly of sales. Pateley Bridge were pressed for sale, and offered below 4l., there being few supporters here; a matter of 50 shares exercises a serious influence. Exchequer fell to 2¼. United Mexican offered at 1¾. Glyn, 3½ to 4. Marke Valley, 1¾ to 2. Aberdaunant, 10s. to 15s. Penstruthal, 9s to 11s.

TUESDAY.—Railways again fell heavily, but recovered early in the afternoon on a report that the strike in Yorkshire had terminated. The recovery in Midland and Berwick was due, however, more principally to repurchases made by a few who had reasons for believing that the traffics to-morrow might be more favourable than was generally anticipated. Berwick fell to 147½, but closed 149¾ to 149⅝; Caledonian to 106¾, closing 107½ to 107¾; Midland to 127¾, closing 129⅛ to 129⅜; and British to 92½, closing 94⅜ to 94⅝. Metropolitan remained dull at 96⅝ to 96⅞. The last price of Egyptians was 43, showing a slight recovery. Peruvian Fives, 15⅝ to 15⅞. Turkish Fives, 12⅛ to 12¼. Saratov Waterworks fell 1l. to 11, 13. Shares of other foreign water companies continue to shrink, threatening soon to become unsaleable. Credit Foncier, ⅞ to 1⅛, flat; Pawson, 4½ to 5; Liebig, 19¾ to 20; Erie, 613¾ to 813⅛; Atlantic and Great Western First Mortgage, 24 to 25. There was an increased business done in mines. East Van, 9½ to 10. Aberdaunant, 10s. to 15s. Glyn, 3½ to 4. Pennerley, 1⅞ to 2⅛. Pateley Bridge, 3¼ to 4. Alamillos again declined, offered at 2¼. Don Pedro, 5s. to 7s. 6d., dull.

WEDNESDAY.—The falling off in the Berwick traffic turned out only to be 2985l., and that of the Midland 3571l., against the 10,000l. currently spoken of early in the week. Accordingly, the former moved up to 151, and the latter to 129¼. British, with an increase of 3168l., rose 1½ per cent. to 96. An important decrease was expected in Great Northern, but the returns showed an increase of 3722l. The A stock rose from 129½ to 132½. The Great Eastern showed an increase of 3003l., the Caledonian an increase of 175l., the Great Western an increase of 4900l. odd. In London and North-Western there was the rather serious falling off of 8707l. Great Western rose to 108½, and Brighton, A, to 104¾. Caledonian advanced to 108½, and Sheffield to 63¾. Egyptians advanced from 43 to 43⅜, 43¾, but were rather neglected. An improvement was reported in Argentine, 1868, to 69, 71. East Van shares were in strong demaad all day, and after reaching 10½, buyers, finally advanced to 11, 11⅛.

THURSDAY.—Buying orders in Egyptians were received to a considerable extent to-day from the Continent, and under such influences the 1873 loan advanced to 45, a higher price than it has been for some time past. Turks, too, showed an improvement. The railway market opened with firmness, but soon fell away; later in the day buying recommenced, and finally prices left off firm. The transactions were, however, very limited. Caledonian rose ½ per cent. to 109, 109¼, but British closed about the same as yesterday. Berwick advanced to 151¾, Midland to 129¾, purely on purchases to cover a fall. York, A, were sold, and declined quite 1 per cent., the large price yesterday being considered altogether unwarranted. Dover, A, 116¼ to 116½. Brighton, A, 106½ to 106¾. Metropolitan, 97 to 97⅝. In mines, East Van were sold, and fell to 10½, sellers. Glyn, 3⅝ to 3¾. Standard Discount, 1½ to 2½, 5l. 10s. pai l.

FRIDAY.—The market opened with rather a dull tendency, British being only 95⅝ to 95⅞, against 96 last night, while Berwicks have fallen ½ per cent., being only 150½ to 150¾. Sheffield, 64½ to 64¾. Midland, 129½ to 129¾. A fall of ⅜ has taken place in Great Western, to 108¼, 108½. Egyptians have given way to 44¾, 44⅝.—*Two o'Clock.*—A further fall is noticeable in railways, but Egyptians are now 44⅞, 44⅝, the same as last night. British are down ⅜, Sheffield ¾, and Great Western ½. East London have fallen 1 per cent., to 40, 41. British, 95¼ to 95½; Berwick, 150¼ to 150½; Brighton A, 106⅛ to 106⅝; Great Eastern, 40⅜ to 40⅝; York A, 131¼ to 132; and Midland, 129½ to 129¾. In mines, Glyn are offered at 3¾, and East Van at 10¼. The settlemedt commences on Monday next, finishing on Wednesday, May 17.—*Four o'Clock.*—Egyptians have further improved, and are now 45¾ to 46. In railways, beyond a recovery of a quarter in North British and Great Eastern, the changes are still downwards. Sheffield now but 63⅛ to 63⅝; Midland, 129 to 129¼; Brighton A, 106¼ to 106⅝; Great Western, 108 to 108¼. Caledonians show a fall on the day of ⅜. East Van dull at 9¼ to 10. The sum of 288,000l. was withdrawn from the Bank. East London unchanged.—*Birchin lane, May 12.*

FERDINAND B. KIRK.

CONSTRUCTING SUB-AQUEOUS TUNNELS.—The invention of Mr. G RAYNOR, of Hackney, relates to the construction of tubular tunnels through seas, rivers, &c., along the bottoms thereof, or in courses excavated or otherwise levelled therein, and provides for the construction of the tube forming the tunnel in short lengths or sections, the ends of each such section being closed so as to be water-tight it is lowered into its place, and there secured by bolts and rivets to the preceding section, after which the bulkheads adjoining the previously executed work are removed, and free communication established with the further end of the section previous to the next one being attached.

*** With this week's Journal a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: Mining Progress in Nova Scotia—No. III.; the Ammonia Proces (E. Smith, F.C.S.); the Nascent Copper Process—the New Company; Canadian Copper and Sulphur Company (T. R. Johnson); the Separation of Minerals; Victoria and Fenton Park Colliery Company; the Gwennap District, and its Unwrought Mining Ground (C. Bawden); the Comparison of Mines; Lead Mines of Derbyshire—No. VII.; Copper Deposits at Nantlle Vale, Carnarvonshire (J. Roberts); Cardiganshire Mines (New and Old)—No. III. (A. Francis); Gold Mining—the Clogau Company (J. Armstead); West Chiverton, and its Management; Mining v. Undermining (T. Vosper); Javali Mines—Joint-Stock Companies Law—the Law of Mines, Minerals, and Quarries—Frontino and Bolivia Gold Mining Company—New Zealand Manganese—Improved Pocket Theodolite—Fuel Economising Furnace Door—Prevention of Overwinding at Collieries—Foreign Mining and Metallurgy—Mining in Butte—Mining in Australasia—Monthly Summary—Australian Mines—Foreign Mines—Successful Mining—Patent Matters—Meetings of the National Provincial Bank of England, Fitzroy Bessemer Steel, Hematite Iron and Coal, Scottish Australian, Vancouver Coal Mining and Land, Wheal Crebor, Central Van, The Montpelier, Ambrose Lake, Dolcoath, and East Pool Companies.

The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, MAY 12, 1876.

IRON.	£ s. d.	£ s. d.
Pig, GMB, f.o.b., Clyde..	2 18 0-	—
,, Scotch, all No. 1 ...	3 0 0- 3 10 0	
Bars, Welsh, f.o.b. Wales	6 5 0- 6 10 0	
,, ,, in London.	7 0 0- 7 5 0	
,, Stafford., ,, .	8 15 0-10 5 0	
,, in Tyne or Tees ...	7 0 0-	—
,, Swedish, London ..	13 0 0-	—
Rails, Welsh, at works..	5 15 0- 6 0 0	
Railway chairs	— -	—
,, spikes	— -	—
Sheets, Staff., in London	10 10 0-11 0 0	
Plates, Staff., in London	10 0 0-12 0 0	
Hoops, Staff.	9 0 0-10 0 0	
Nail rods, Staff. in Lon.	7 15 0- 8 10 0	
STEEL.		
English, spring	..16 0 0-25 0 0	
,, cast	..35 0 0-50 0 0	
Swedish, keg.....	..18 10 0-	—
,, fag. ham.	..21 0 0-	—
LEAD.		
English, pig, common .	21 7 6-21 10 0	
,, ,, L.B.	21 12 6-	—
,, ,, W.B.	24 0 0-	—
,, sheet and bar..	22 0 0-22 10 0	
,, pipe.....	24 0 0-	—
,, red	24 0 0-24 10 0	
,, white	28 0 0-29 10 0	
,, patent shot ..	25 10 0-26 0 0	
Spanish.....	21 0 0-	—
QUICKSILVER.		
Flasks of 75 lbs., ware.	10 0 0-	—
SPELTER.		
Silesian or Rhenish ..	24 0 0-	—
English, Swansea	23 10 0- 23 15 0	
Sheet zinc	28 0 0- 28 10 0	

TIN.	£ s. d.	£ s. d.
English, ingot, f.o.b...	78 0 0-	—
,, bars ,, ...	79 0 0-	—
,, refined.....	80 0 0-	—
Australian	72 10 0-	—
Banca	82 0 0-	(nom.)
Straits	72 10 0- 73 0 0	
COPPER.		
Tough cake and ingot.	83 0 0- 85 0 0	
Best selected	85 0 0- 86 0 0	
Sheets and sheathing .	89 0 0- 90 0 0	
Flat Bottoms	92 0 0-	—
Wallaroo	84 0 0-	—
Burra, or P.C.C.	84 0 0-	—
Other brands	82 0 0-	—
Chili bars, g.o.b.....	78 10 0- 79 0 0	
PHOSPHOR BRONZE.		
Bearing metal	£120 0 0	
No. VII. alloy	145 0 0	
BRASS.		
Wire	9¼d.-	—
Tubes.....	9 -12d.	
Sheets	9 -10	
Yel. met. sheath. & sheets.	7½ - 8	
Nails composition.....	9½ -10½	
TIN-PLATES.*	per box.	
Charcoal, 1st quality ...	1 6 0- 1 8 0	
,, 2nd quality ...	1 3 0- 1 5 0	
Coke, 1st quality	1 1 0- 1 1 6	
,, 2nd quality	0 19 6- 1 0 0	
Black .....per ton	17 0 0- 17 10 0	
Canada, Staff. or Gla., at Liverpool	13 10 0- 14 0 0	
Black Taggers, 450 of 14 × 10	30 0 0-	—

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; IX 6s. per box more than IC quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—The Board of Trade Returns for April, which have been published during the week, reveal a condition of affairs which but too faithfully endorses all that has been said in these columns in regard to the unsatisfactory state of the trade of the country generally, and of the metal trade more particularly. The exports for the month exhibit a decline of 23½ per cent., a larger deficit in any single month than has before been chronicled. This comes upon the top of a deficit of 7½ per cent. during the same month last year. During the past four months of the current year the decline in the value of exports amounts very nearly to 7,000,000*l.*, as compared with the like period of 1875. The falling off is rather in value than in quantity. From this it may be gathered that lower prices may possibly still become current, and that the existing depression may yet become greater before the tide turns.

As regards metals, the account with Russia shows a very serious falling off in the quantity of railway material. As compared with her requirements two years ago, barely one-tenth of the quantity then taken is now being exported. The United States, which was one of our largest markets for metals, has almost ceased, comparatively speaking, to do business with this country; the import duties are so heavy as to prove prohibitory. On the other side of the account the imports for the month of April exhibit an increase of 15½ per cent., or 4,700,000*l.*, which is mainly composed of such articles as would go to prove the anticipation of a revival of various commercial industries. Thus, albeit that the value of cotton has materially decreased, the imports show an increase of nearly 2,000,000*l.* Doubtless the returns of other countries would be much of the same character as our own, but meanwhile the necessities of daily life continue, and consumption is to a greater or lesser extent going on, and when the tide does turn there is no reason to believe but that with the facilities which are at our command, the metal trade of the United Kingdom will once again flourish, though perhaps it may be long before trade is pushed as it has been, beyond the legitimate requirements of the times, and it is to be hoped, indeed, that such may not again occur.

COPPER.—The firmness which has been maintained in the market for the last few weeks is gradually dwindling away. It was a matter of some question a fortnight ago as to what the cause of the apparent improvement might be. It was thought that, perhaps, private information had been obtained to the effect that charters were likely to be small, or that an improvement in the demand might be expected, but the announcement at the beginning of the week of charters for the last half of April to the extent of 2200 tons, of which 150 tons ore and regulus and 650 tons bars were for England, 550 tons bars for the Continent, and 550 tons for America, dispelled the supposition of light charters being the cause of firmness, and up to this time there has been no apparent improvement in the demand, so that it is not a matter of astonishment that the market has lost somewhat of its firmness, and that quotations are a shade easier, but without inducing buyers to come forward. It is becoming daily more palpable that until holders of the raw material are prepared to submit to lower prices the market will remain sluggish, for there is not the slightest reasonable probability to suppose that with the state of trade as it is there can be a revival while quotations are maintained at their present figure. Holders must be content to hold for yet a considerably longer period, unless they are prepared to moderate their prices to the necessities of the times. The rate of exchange from India is even more unfavourable than it has been, and while this continues it is not likely that this market, which at one time consumed large quantities of copper shipped from this country, will afford much relief. The home trade is quiet, as is also the continental trade, and that with North and South America. Prices are not unreasonably high. They have often been much higher than they are, but the conditions of trade were very different in those days to what they are now, and quotations can only be said to be high or low as taken in connection with the surrounding circumstances. Chili bars, g.o.b., 79*l.*; Wallaroo and Burra, 84*l.*; tough, 85*l.*; best selected, 86*l.* to 87*l.*; Indian 4 by 4 sheets, 90*l.*; strong sheets, 91*l.* to 92*l.*

IRON.—There is a slight appearance of improvement in the position of the iron trade in South Wales, in consequence of the large quantity of metal cleared for export, but too much must not be gathered from this, inasmuch as there is at present no indication that the demand is now, or is likely to be, better. One of the chief supports of the market is from Sweden, and iron is being shipped to India and the colonies. America and Canada are out of the market, and the home trade is unsatisfactory. In the North of England the value of pig iron shows a decline, No. 1 being quoted 51s. 6d. to 52s; No. 3, 47s. to 47s. 6d.; No. 4 forge, 46s., less 1 per cent. The output of pig-iron in this district is less by 14,000 tons for the month of April than for March, but notwithstanding this there is an increase in the stocks in makers' hands to the extent of 5579 tons. Stocks at end of April are computed at 113,628 tons. The number of furnace in blast in the district is reduced to 114, and it would seem that the make is still in excess of the demand. Manufacturers are evincing a disposition to accept lower prices, and a certain amount of speculative business has resulted, but trade purchases have been limited to actual present requirements. In the finished iron market there is nothing encouraging to report. Rails are quoted at 6*l.* 5s.; ship-plates, 7*l.* 10s. Plate makers are fairly supplied with orders for the present, but fresh contracts are looked for with some anxiety. Merchant bars, 6*l.* 12s. 6d.; the enquiry for this description is slightly better, but many makers are still on the look-out for orders. Angle iron, 7*l.* 5s., with moderate business doing. The question of wages is now under consideration, with a view to its being laid before the arbitrators shortly. The Scotch pig-iron market has been quiet but steady during the week. The shipping returns show considerable improvement, and are better than at any previous period of the year, but the improvement has not been such as to effect any advance in quotations for makers' iron. The highest price for warrants during the week has been 58s., and business has been done down to 57s. 10d. To-day's quotation is—buyers, 57s. 7½d.; and sellers, 57s. 9d.

SHIPMENTS.

Week ending May 6, 1876	Tons 12,570
Week ending May 8, 1875	11,624
Increase.....	946
Total decrease for 1876	34,972

LEAD.—The market for English remains very dull. Good soft pig-lead is quoted 21*l.* 7s. 6d. to 21*l.* 10s., but there is a slight advance in Spanish soft, without silver, which is in some little demand at 21*l.* to 21*l.* 2s. 6d.

SPELTER.—No change has been reported in Silesian or other descriptions. A sale of Australian ingots is reported at 20*l.*

ZINC.—A parcel of upwards of 100 tons London rolled sheet zinc has realised 28*l.* 2s. 6d. or an advance of 2s. 6d. over last sale.

QUICKSILVER.—The market continues quiet, at previous quotations.

TIN.—During the early part of the week the firmness with which the market closed at the end of last week was fully maintained, and the price of Straits and Australian tin advanced from 72*l.* 10s., the closing price of last week, to 73*l.* 10s. and 74*l.*, but on Wednesday last the announcement of the next Banca sale, to take place on the 31st inst., and to consist of 29,300 slabs, somewhat damped the market, and quotations began to recede, and since then there has been no rally. The stock being so large, it is difficult to see how, in the present state of trade, prices can be upheld.

TIN-PLATES.—A few orders have been executed, but the market shows no appearance of recovery from the condition of dulness, amounting to stagnation, into which it has fallen for some time past.

THE IRON TRADE—(Griffiths's Weekly Report).—Friday Evening.—The Glasgow market for Scotch pigs closes this afternoon (Friday) at 57s. 9d., sellers, which is the same price last week within 3d. per ton. We quote makers' No. 1 iron—Gartsherrie, 65s.; Coltness, 67s. 6d.; Calder, 67s. 6d.; Langloan, 66s.; Summerlee, 64s.; Monkland, 59s., f.o.b. Glasgow; Glengarnock, 64s.; Eglinton, 57s. 6d., f.o.b. Ardrossan; Shotts, 67s. 6d., f.o.b. Leith; Kenniel, 60s., f.o.b. Bo'ness. We have but little change to notice in the iron market this week. The Scotch market is steady, with values unchanged.

Liverpool and Manchester—buying flags, and business on an extended scale is restricted. Our Leeds correspondent reports the business done on the Leeds Exchange on Tuesday to be very limited. With the exception of the noted Yorkshire houses, who work for the machinists and also railway specialities, he says trade is at a standstill. The same correspondent reports that a large contract has been taken by a Belgian ironmaster for iron to be delivered into Leeds. The men continue to hamper the masters on the wages question.

The meeting on the Birmingham Exchange yesterday was cheerful, and the enquiries for sheet-iron, hoops, and second-class bars were numerous, without a large business. The North Staffordshire ironmasters have taken some good orders this week, principally for London, on account of the engine factories on the banks of the Thames; and, on the whole, the trade for all kinds of iron, both in North and South Staffordshire, is perhaps a shade better.

The Messrs. Naylors, managing directors of John Bagnall and Sons, have sent in their resignations. The smelters in Staffordshire are trying to meet the market in price as well as they can, but no more furnaces are blown in, or likely to be, for the present. The eminent firm of G. B. Thorneycroft and Co. have the whole of their works in operation this week, under the guidance of the newly constructed private firm, Colonel Thorneycroft being now at the head of this old firm.

Messrs. JAMES and SHAKSPEARE—COPPER: The trade in bars has been rather limited, the transactions being confined to a few lots of ordinary brands, wanted either to cover previous "bear" sales, or else destined for immediate consumption. Considering the relatively high values of this description, it is rather surprising that quotations are so well maintained; and as the quantity on sale is limited it would, moreover, be impossible to secure any large proportion of the existing stocks without driving prices up to the level of refined metal. The only parallel to the present position of the article is to be found during the speculations of 1872, when (as now) bars ranged within 4*l.* per ton of Australian copper; which, considering that the former assays only 99 to 97 per cent, whilst the latter is pure metal, shows that some special causes must be at work to produce such an anomalous state of affairs. Wallaroo and Burra are neglected, though to be had on very reasonable terms; and it is somewhat surprising that these descriptions should be obtainable at such low figures, whilst other sorts of copper are selling at extreme rates. Smelters are firm in their quotations for English, and report a good trade doing at full prices.—TIN: English is rather firmer, in sympathy with the advance in other sorts. Foreign descriptions were largely dealt in during the earlier part of the week, and up to 74s. 6d. was paid both for Straits and Australian; since Wednesday, however, the tone of the market has been quieter, and at the close there were sellers at a reduction of about 1s. per cwt. The Dutch Trading Company have declared 29,300 slabs Banca as the quantity to be offered for sale at their auction on the 31st inst. The belief is gaining ground that this time there will be no reserve.

Messrs. FRY, JAMER, and CO.—COPPER has fairly maintained the improvement noticed in our last, and further considerable purchases of furnace stuff have been made by the smelters at 16s. per unit for Chili regulus; but in the last few days the absence of buyers has caused a slight reaction, and prices generally are about 10s. per ton lower than the highest attained. A steady diminution of the stocks of Chilian is a noteworthy fact—the quantity now in warehouses in England being 9500 tons, against 13,000 at same date last year, and upwards of 20,000 tons at the same date in each of the two preceding years. In Australian, notwithstanding the heavy importations, the stocks show a slight decrease, the deliveries in the first four months of this year having reached 4100 tons—a quantity greatly in excess of the average.—TIN has fluctuated considerably, but, on the whole, has maintained an improved value. The arrivals from abroad, although considerable, have not been excessive, and a good rate of delivery has been maintained. The next public sale of Banca is announced for the 31st inst., when 29,300 slabs will be offered.—SPELTER continues steady, with, if anything, a shade more of firmness.

Messrs. GRENFELL and RICKARDS—COPPER: Since our last monthly issue there have been considerable transactions in furnace stuff, and also in Chili bars, resulting in an advance in the latter of about 2*l.* to 2*l.* 10s. per ton for the month. The smelters must now be fairly supplied with material. Demand for raw copper is moderate, but in manufactured orders there is still much room for improvement. The stocks in public warehouses in England are smaller than for some time past, and consumers, it is well known, are very bare of supplies. Supposing anything like a demand to arise for India and Russia—and the latter country ought to take a considerable quantity to bring up her consumption to the level of former years—we think it fair to anticipate a rise in values of English. Australian is suffering, and will probably suffer for some time to come, from the sales of Lake Superior referred to in our last.—TIN: The actual stock in warehouse, London, is 7500 tons, a quantity never before reached, although, looking at shipments for this port as compared with delivery, the position is more hopeful. Thus, shipments for the first four months of this year of Straits and Australian are 4870 tons, whilst 4150 tons were delivered. Should the tin-plate and general trade of the country improve, there are grounds for thinking that consumption would equal, possibly again exceed, production.

Messrs. SANFORD and BIRD—COPPER: The market is slightly easier. Chili bars have relapsed about 10s. per ton, while Australian sorts are rather neglected. The demand for manufactured English is fair, and prices show no change from last week.—TIN has improved during the week about 3*l.* per ton, although the amount of business transacted has not been important. It closes steady at 74*l.* for Straits and Australian. The shipments from the Straits during the month of April were only 290 tons, and from Australia 350 tons.—TIN PLATES: There has been more business done the last week in tin-plates, but prices are unchanged. The exports keep fairly good, as shown by the following returns:—Export of tin-plates, January to April—1874, 42,381 tons; 1875, 48,058 tons; 1876, 41,752 tons.—LEAD closes quiet and unchanged in price. The Board of Trade returns give the following figures:—Imports from January to April—1874, 20,409 tons; 1875, 25,210 tons; 1876, 25,490 tons. Exports from January to April—1874, 11,905 tons; 1875, 8995 tons; 1876, 11,067 tons.—QUICKSILVER is still quoted 10*l.* per bottle:—Imports from January to April—1874, 1,221,280 lbs.; 1875, 1,558,122 lbs.; 1876, 1,906,437 lbs. Exports from Jan. to April—1874, 774,154 lbs.; 1875, 324,286 lbs.; 1876, 652,856 lbs.

Mr. MURRANT—TIN: In foreign a slight spurt was shown on Tuesday and Wednesday, the nominal price being at one time about 75s., but at the close last night there were sellers at 73s. 6d, with buyers at 73s. 3d. for small quantities, the tendency being rather downwards than otherwise. It is difficult to account for this sudden recovery and relapse, but the impression appears to be that at the next sale of Banca on the 31st inst.; the Trading Company will reduce their limit of 50 fl., in order to accelerate the sale of the 900 tons which will then be offered.—COPPER: The London market for foreign has become flat during the last day or two, and sales at nominal rates have been rather difficult to effect. The closing price of bars was 79*l.* cash, forward lots being comeatable at same figure.

Messrs. VIVIAN, YOUNGER, and BOND—COPPER: On the 8th inst. charters for the fornight ending the 3rd inst., at Valparaiso, were advised as representing 2200 tons fine copper, 850 tons bars for France, and for England 150 tons fine in ores and regulus, 650 tons bars and ingots, in addition to which 550 tons for America, said to be in transit hither by the new line of direct steamers to the States. The market has been steady during the week without much business, Chili bars selling at 79*l.* to 79*l.* 15s., according to brand, and closing quietly. Australian sorts rather neglected at about 84*l.* 10s. for both Wallaroo and Burra, outside brands selling at 1*l.* and 2*l.* under this quotation, as in quality. For English the demand is sluggish at 90*l.* to 91*l.* for manufactured, 85*l.* for tough, and 84*l.* for best selected.—TIN: There has been more activity in the market during the week than for some time past, and prices have rallied about 2s. per cwt., up to 74s. being paid for Straits, and 73s. 6d. for Australian. Yesterday the Dutch Trading Company announced that they would offer at their next sale on 31st. inst. 29,300 slabs Banca. The market closes easier, with sellers at 74s., and buyers at 1s. less.—TIN PLATES: The demand for America continues very dull, but considerable orders keep coming in from other countries, which enable makers to be firm in their prices.

Messrs. PIXLEY and ABELL—GOLD: Shipments of coin have been made to Lisbon and Rio during the past few days, and the amount thus withdrawn from the Bank is 109,000*l.*; with this exception there is but little demand for gold for export, and the Bank has received about 120,000*l.* since our last circular of the 4th inst. The Maskelyne has brought 56000*l.* from the Brazils; the Siam has brought 47,620*l.* from Bombay; the Nyanza has brought 31500*l.* from the Cape: total, 56,370*l.* The Elbe has taken 112,270*l.* to Lisbon and Rio.—SILVER: Silver has again declined in value, owing to the receipt of lower Exchanges from India. Transactions have taken place at 5⅛d. per oz. for the Continent, but there is but little doing for India at present, as buyers are waiting to see at what rate the 700,000*l.* Council Drafts on India will be allotted on the 17th inst. We have received about 97,000*l.* from New York during the week. The P. and O. steamer takes 15,100*l.* to Bombay.

Messrs. HENRY ROGERS, SONS, and Co.—COPPER: The market for all descriptions is less active, but about 5s. is the only obtainable concession on bars, and this for very limited quantities. The ores in the Swansea sale on May 9 went at 15s. 8½d. to 15s. 9½d.—about 2d. advance on last month's prices. In Australian there is not much doing, but very small quantities only of Wallaroo appear to be left on hand from the last sale. The export demand for manufactured is decidedly slack; on the other hand, the railway companies' annual tenders are for increased quantities, and for general purposes there is a fair enquiry.—TIN: This metal has advanced 60s. in the week, the demand being good, and the disposition to sell much restricted, hence the advance. At the close, prices have again receded a trifle.—SPELTER Market steady, with a quiet demand. Zinc advanced 2s. 6d.

At Swansea Ticketing, on Tuesday, 1317 tons of copper ore were sold, realising 19,911*l.* 15s. 6d. The particulars of the sale were—Average standard for 9 per cent. produce, 99*l.* 14s. 9d.; average produce, 19 5-16; average price per ton, 15*l.* 2s. 5 l.; quantity of fine copper, 254 tons 7 cwts. The following are the particulars of the two last sales:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
April 25	1155 ...	£ 98 0 0 ...	23 13 16..	£18 7 4	15s. 5d...	£77 1 6
May 9	1317 ...	99 14 9 ...	19 5-16..	15 2 5	15 7 ...	77 18 4

Compared with the last sale, the advance has been in the standard 1*l.* 14s. 9d., and in the price per ton of ore about 6s. 9 l. Messrs. Richardson and Co. report that the Cape ores gave a produce of 31½, and sold at 24*l.* 11s. 5d. per ton, being at the rate of 15s. 9½d. per unit, or at a standard about 2s. 6 l. worse than that for the whole Cape, Algiers, Knockmahon, Cronebane, Cuba, and elsewhere.

With the exception of an improved feeling for tin mines, and a slight advance in one or two of them, the MINING SHARE MARKET shows very little change since our last. The most noticeable feature of the week is that the oldest tin mine in Cornwall—the Dolcoath—one that has been worked continuously for more than 100 years, and is now nearly 400 fms. deep, has paid a dividend of 1611*l.* for the quarter, with tin ore at 40*l.* per ton. The returns are close upon 100 tons per month; and at the bottom of the mine the tin stone is said to be remarkably rich, which may account for a profit when ordinary tin mines are making such heavy losses.

The mines dealt in since our last have been Dolcoath, Carn Brea, Roman Gravels, Tankerville, Pateley Bridge, Parys Mountain, Rookhope, East Van, Glyn, West Tankerville, Pennerley, Old Treburgett, North Laxey, and a few others.

Roman Gravels, 15 to 15½; the sale of ore here, 200 tons, realised 2995*l.* Tankerville, 10¾ to 11¼; the lode in the 167 west is worth 100*l.* per fathom; winze below the 167, 60*l.* per fathom. The sampling for this month is 150 tons of lead ore. West Tankerville, 2 to 2½; the sale of lead ore, 25 tons, with 20 tons of blende, realised 488*l.* 12s. 6d. South Roman Gravels, 1 to 1¼. Pennerley, 1⅞ to 2⅛; the sampling here is 80 tons lead. Pateley Bridge shares have been flat, but the mine continues to look well, and the Lumb vein, at the 10, is yielding 1¼ ton of lead ore per fathom; shares leave off 3¼ to 3¾. West Pateley, 5 to 5½; Assheton, 1⅛ to 1⅜; West Assheton, 2 to 2¼. Rookhope (lead) have been in good demand, and leave off 22s. 6d. to 25s. Great Laxey, 17 to 18. North Laxey, 19s. to 21s.; the lode continues large and promising in the shaft. Van, 38 to 40. East Van have been firm, and leave off 10 to 10½. Van Consols, 2 to 2½; Glyn, 3½ to 3⅝; Old Treburgett, 8s. to 10s. Great Dyliffe, 4½ to 5; this mine has sampled 100 tons of lead ore for the month. Ladywell, 25s. to 30s.; Plynlimmon, 9s. to 11s.; Pennant, 5½ to 5⅝; Saint Patrick, 25s. to 27s. 6d.; Great West Van, 10s. to 12s.; West Chiverton, 16½ to 17½.

Dolcoath, 34 to 36 ex div.; at the meeting on Monday the accounts for three months showed a profit of 1553*l.*, and a balance in hand of 1745*l.*, out of which a dividend of 7s. 6d. per share (1611*l.*) was declared, leaving 134*l.* in hand. The costs for the quarter were 10,793*l.*; the returns, 295 tons of tin, which realised 12,346*l.* The tin sold realised less by 4*l.* per ton than that credited in the previous quarter, and this made a difference in the profits of about 1200*l.* The mine is now down 7 fms. below the 326; the lode when last seen to the north of the shaft was worth 120*l.* per fathom for 12 ft. The 326 east is worth 40*l.* per fathom. The 326 west 65*l.* per fathom. The ends in the aggregate are worth about 168*l.* per fm. Minera, 12 to 12½ ex div.; a dividend of 6s. per share (2700*l.*) has been declared out of the profits for the 12 weeks' working to Feb. 26. Carn Brea, 30 to 32½; Cook's Kitchen, 2½ to 3; Tincroft, 17½ to 18½; Devon Great Consols, 3 to 3½; Cathedral (New), 30s. to 32s. 6d.; East Caradon, 1⅝ to 1⅞; Marke Valley, 1¼ to 2½; Penstruthal, 8s. to 10s.; South Condurrow, 3½ to 4; South Frances, 27s. 6d. to 32s. 6d.; West Tolgus, 61 to 63; Wheal Grenville, 17s. 6d. to 20s.

Wheal Crebor, 2 to 2½; at the meeting the accounts for the quarter—in which, however, four months' costs, up to April 22, were charged against three months' ores—showed a loss of 173*l.* 8s. 5d., and a balance in hand of 373*l.* 7s. 1d. Had the fourth month's ores been credited a profit would have been shown. The agent estimates the ores on the floors at 100 tons, and for the ensuing quarter he hopes to sell 240 to 250 tons of ore; and, as three months' cost will only come in against it, the profit will be from 400*l.* to 500*l.* The mine is looking well, and the lode in the 108 east is promising for a course of ore. The 48 east is worth 10*l.* per fathom. The stopes 15*l.* and 40*l.* respectively. Parys Mountain, 14s. to 16s.; the 90 fm. level cross-cut is beginning to have, as the agent states, a lodey appearance, with water issuing strongly from the forebreast. It would seem, therefore, that the grand point towards which the company have been for some years pushing may be near at hand. The 45 end continues worth 5 to 6 tons of copper ore and 2 tons of sulphur per fathom.

East Pool, 12½ to 13½ ex div.; at the meeting in Cornwall the accounts as presented showed a profit on the two month's working of 711*l.*, a balance in hand of 861*l.*, and a dividend of 2s. 6d. per share (800*l.*) was declared. In the back of the 180 the lode is worth 20*l.* per fathom, and the 180 west 15*l.* per fathom. The mine altogether is looking well. At the North Treskerby meeting, in Cornwall, a call of 5s. per share was made. The cost for eight months was 1620*l.*; returns, 678*l.*: loss, 942*l.* The agent recommends putting the 80-inch engine to work to develope the copper lode. Wheal Basset, 7 to 8; the accounts showed a loss af 1088*l.* in three months' working, and a debit balance of 7107*l.* A call of 2*l.* per share was made. The costs were 3371*l.* Returns of the quarter were—Copper, 113¾ tons, 711*l.*; tin ores, 38 tons, 1610*l.*; total, 2282*l.* An improvement has taken place in the 70 cross-cut, where in driving to cut the copper lode they have intersected a good tin lode, worth 10*l.* per fathom. Relistian Consols, ⅝ to ¾.

Argentine, 6¼ to 6¾; Condes of Chili, 6¼ to 6¾; Cedar Creek, ½ to ¾; Chontales, 8s. to 10s.; Eberhardt and Aurora, 7⅞ to 8; Frontino and Bolivia, 1⅞ to 2⅛; Javali, 6s. to 8s.; I.X.L, 20s. to 22s. 6d.; Richmond, 7 to 7¼; San Pedro, 1⅞ to 2⅛; Sweetland Creek, 2 to 2½; Santa Barbara, 1⅝ to 1⅞.

The Market for Mine Shares on the Stock Exchange has been without special feature, quotations remain unchanged, except for a few leading descriptions, in which a fair amount of business has taken place. The Metal Market has been rather more active; copper steady, without much business; tin firmer than for some time past, although the market closes somewhat easier; lead unchanged, and spelter less firm, especially for forward delivery.

Exchequer shares have declined to 1⅞, 2⅛ upon some misapprehension concerning the intelligence conveyed by telegram. Officially it has been notified that a telegram has been received from Mr. Lewis Chalmers, as follows:—"Days, 25; tons, 96; bullion, 1800; furnaces succumbed; stop to erect O'Hara furnace." From this it would appear that the two old reverberatories on the Freiberg principle with which the mill was provided for roasting ore, and which Mr. Chalmers intended to use as a temporary makeshift until the weather allowed him to put up, along with another battery of 10 stamps, a modern furnace of approved construction, capable of roasting 20 tons of ore per diem, have, probably from long disuse, failed even to do the 6 tons per diem expected. Mr. Chalmers has accordingly stopped the mill, and given orders to erect the O'Hara furnace, and in a short time will be able to manipulate 20 tons per diem. Towards the erection of this furnace the directors have already sent him funds, and as the winter is now over they hope to hear soon that every department is in satisfactory working order, and the trams hauling the rich ore from the 300 ft. level to the mill. It will be time enough in July to form an opinion as to what the mill and mine are able to do; no doubt is entertained upon this point by those who know the character of the discoveries of ruby silver at the 300 feet level, samples of ore from which assayed from 24*l.* up to 164*l.* sterling per ton. Recent advices state there is a large body of rich ruby ore, which the manager is opening up, having let a contract to run a drift 50 ft. further into the level.

I.X.L. have advanced to 1, 1¼; we understand the whole of the unallotted shares (40,000) have been taken up; this has placed the directors in possession of ample capital to develope the mine during the summer, erect a mill before winter to reduce the ore, which, in the meantime, will be brought down, and also to form a strong reserve fund to meet any contingency which may arise. The company is thus placed in an absolutely safe position; the shares, it is understood, have been mainly taken up by those who are not likely to throw the stock on the market, but to await the results so confidently looked for early in the ensuing year. Eberhardt and Aurora, 7⅞ to 8; a cablegram has been received announcing that there are

1000 tons of ore at the mill, that the mill was re-started on May 4th and that all was going well. Richmond Consolidated, 7 to 7¼; the report of the manager appears in another column.

Condes, 6¼ to 6⅜; the first shipment of ore is due by the Pacific Royal Mail steamer early in June. From the last advices we learn that the new discovery from the side lode was producing ore worth 110 ozs. of silver to the ton, and 50 per cent. lead, and yielding a quantity which of itself was taxing all the resources at present at command for transportation to the coast. Arrangements are being made on the opening of the coming season for at least 400 to 500 tons per month. The adit, which will intersect the whole of the seven discovered lodes on the company's property at a depth of upwards of 50 fms. below the Isolina workings, is being prosecuted with a full force of men, and it is expected that the same will be continued through the whole of the winter.

Argentine, 6¼ to 6⅜; a very large business has been done in these shares during the week. Advices have been received that the third shipment of machinery had arrived at Rosario, sufficient to put the whole 36 heads of stamps in complete working order; that the Piqué Mine was in fork, and sufficient ore being raised to keep the above number of stamps fully employed from new workings, and very important discoveries have been made upon other of the company's mines, proving that a supply of ore can be obtained sufficient to keep 100 heads at work. The commissioner at the mines writes that every day he is more than ever satisfied that all that he has said will be more than realised.

The market for Hydraulic or Gold Washing Companies shares on the Stock Exchange has been more active during the week, and prices have been well maintained, with the exception of Sweetland Creek. The various Californian companies are just beginning the washing season, for although one or two of them have managed to wash, more or less, the season thus far has commenced exceedingly late, owing to the heavy storms, the last of which is recorded as happening on April 13, when nearly 2 ft. of snow fell. The warm long days, with ample water, will, it is expected, more than compensate for the loss of time. Advices from the neighbourhood mention that the water ditches are most of them running their full capacity, and miners have reason to be well satisfied with the outlook. Blue Tent, 3 to 3¼; very good progress is being made in running the South Yuba bed-rock tunnel, and this claim is rapidly assuming a first-rate state. The late blast has left a large quantity of gravel ready for washing. Two other blasts are in course of preparation, and when exploded will leave a splendid face for operations. All work in this claim has hitherto been on top dirt. The gravel immediately overlying the bed-rock, always the richest, remains intact, and will be operated on as soon as the manager can get water through the aqeduct. Shares enquired for, and firm at quotations.

Sweetland Creek, 1⅝ to 1⅞; Mr. McLean reports that he is washing as before. There has been a great drop in the price of these shares recorded during the week, but we fancy it is more nominal than real, as but very few transactions have been marked. Birdseye Creek, 1⅞ to 1⅞; a telegram from Mr. Powers states the result of the run for April as giving a profit of $1500. Shares hares have been dealt in, and close steady, at quoted prices. Cedar Creek, ⅝ to ¾; Colonel Ludlum telegraphs the clean-up for April $18,500 gross receipts, $8500 running expenses. He further states that the Badger claim is not included in this, as he has not cleaned-up there yet, and that he has re-commenced driving the Yankee Tunnel. From local papers we gather that the company are selling a large quantity of water, and are pushing on their own claims with vigour. Shares remain quiet, but exhibit a tendency to advance, and we note a fair amount of business. Oregon Pref., 4 to 4¼; the prospects of this company are improving with every day's work. The last lot gold, the result of the preliminary washing on the Thoss claim has turned out to be finer than was anticipated, and given, of course, a corresponding increase to the profits. Washing is now being carried on both at the Thoss and Reed claims, and no doubt is entertained of the result when the clean-up is made. Considering the small amount of preference capital, and that it has to be paid off before the ordinary shares participate, this stock would appear to be a secure investment, and it closes steady.

Cape Copper, 38½ to 39½; the annual reports by the departmental officers upon the several works show that, notwithstanding the fact that their efforts in developing the mineral resources of the company's extensive lands in this district have not yet been crowned with success, and in some instances—as at the Orange River Centres—have failed, yet the manner in which the principal mine continues to open out compensates for the disappointment. At Ookiep several levels have been driven 12 fms. below the 68, but owing to the angle at which the main level of ore has dipped the productive ground has not yet been intersected; the rock is, however, considered as being of a congenial nature, and a splendid stope is being worked a few feet only above the drivings. The yield of ore during the last 12 months exceeds that of any previous year, and towards the close of 1875 the returns reached 1000 tons of 21 cwts. per month; the total weight sampled was 10,870 tons net dry weight, which averaged 20¼ per cent.; notwithstanding the heavy output that has been kept up, and the delay that has occurred in striking the ore contained in the deep workings, the mine captain, who, as usual, is anxious to keep on the safe side, considers himself secure in computing the reserves at 37,060 tons. The appearance of the Spectakel Mine is such that the agents are not in a position to write cheerfully about it; the monthly sampling has been kept up to an average of about 50 tons. At the Trial Mines the workings have not penetrated far enough to permit of any definite decision being arrived at, and as long as the workings continue to present the appearance they do—at some points having the rock impregnated with fine spots of copper ore, at other places yielding stones averaging 24·30 per cent.—it would obviously be very unwise to slacken the efforts to grasp the wealth which seems within reach.

Van, 38½ to 39¾; the driving of the 105 has been resumed. Good progress is also being made with the erection of the large engine, and no change has been reported from the mine. Grogwinion, 5½ to 6½; the 24 driving in the No. 4 lode is opening out well, and the other levels will shortly be driven into the same lode. The deep adit will also be continued northward to cut this lode as soon as communication has been completed with the level above. The mine continues to improve at all points, and splendid returns of lead are being made; 100 tons will be sampled on Monday. Pateley Bridge, 3 to 3½; Lumb vein going east from the south cross-cut in the 10 is regular and well defined, the leading part being from 4 to 5 ft. wide, and worth 1¼ ton of lead per fathom. Gulf vein at this level is worth 15l. per cubic fathom. In the west cross-cut at the 20 the men are close upon the Gulf and Lumb veins. Fielding's vein has just been cut in the east cross-cut at the 20, and at the point of intersection contains some nice solid ore in paying quantities. There is a rich course of ore gone down in the sump on this lode, and in advance of the present end. Pringap vein is worth 1 ton per fathom. Sun vein in the shaft sinking under Gillfield level, is worth 12l. per fathom. Good progress is being made in the engine-shaft, and the ground is congenial for the production of lead ore. West Pateley Bridge, 5 to 5¼; the new level from the joint adit level is making fair progress, ground easier, and a small stream of water issuing from the forebreast. The cross lode upon which they are driving is carrying gossan and barytes with spots of ore. Nos. 1 and 2 shafts are being pushed on, but exhibit no change since last report.

Wye Valley, 6½ to 7½; the 22 has further improved, and is now making headway into the ore ground, which is opening out rich. The other levels are also giving capital returns, and the mine altogether never looked better. West Wye Valley, 4 to 4½; the 26 is still being driven in a most promising lode, and splendid lead, rich in silver, is being raised. The machinery and surface works are being pushed ahead with vigour. Van Consols, 2⅛ to 2⅜; 25 tons of lead was sampled on Wednesday. The drawing shaft is now rapidly approaching completion. This done the underground operations will be carried on with much greater speed and much more economically.

Glyn, 3⅜ to 3½; five points of operation are being carried forward—the 15 east, 15 west, two winzes under the same level—all of which are producing lead. The shaft is now about 7½ fms. under the 15, and good leaders of lead already met with. A cross-cut will be put out at the 25 fm. level, and the lode seen during next month, and it is confidently expected that a fine course of lead will be met with. Great West Van, 10s. to 12s. 6d.; indications of improvement are presenting themselves in the both level.

Llanidloes, 3 to 3½; mine looking well in deep levels, and the shaft going down for a new level below the 90 in promising ground. West Goginan, 2 to 2½; the works underground show a steady improvement, and prospects are most promising. Pennerley, 1⅝ to 2⅛; the various points of operation are being pushed on energetically, and are without change to notice. The agent has commenced some more tutwork bargains, with a view of getting at some ground now only partially opened. The sale on Thursday, 80 tons of ore, realised 1170l. Great Dyliffe, 4½ to 5; the operations at the mine are progressing as usual. The company sampled 100 tons of lead ore, for sale next Wednesday, the produce of four weeks' dressing. Assheton, 1½ to 1¾. West Assheton, 1⅝ to 2⅛; a good branch of lead continues in the 50 west, and in the 50 east the men bored into lead 15 in. yesterday; more of this will be seen in a day or two. All the dead work is proceeding rapidly, and in the next few weeks many points of great interest will be intersected.

Cathedral (new issue), 29s. to 31; all work progressing well. Only one opinion is entertained—that complete success will attend the development of the lode in this mine. Penstruthal, 8s. to 10s.; everything here points conclusively to the existence of a course of copper ore in this property.

Subjoined are the closing quotations—

Assheton, 1½ to 1¼; Carn Brea, 29 to 31; Devon Great Consols, 3⅜ to 3⅝; Dolcoath, 33 to 35; East Caradon, 1½ to 2; East Lovell, 2 to 3; East Van, 9¾ to 10¼; Glyn, 3¼ to 3⅜; Great Laxey, 17 to 17½; Great West Van, ⅜ to ⅝; Great Wheal Vor, ½ to 1; Hingston Down, ¾ to 1; Marke Valley, 1⅝ to 1⅞; Pateley Bridge, 3 to 3½; Parys Mountain, ⅝ to ¾; Pennerley, 1⅞ to 2⅛; Penstruthal, 7s. to 9s.; Roman Gravels, 14½ to 15½; Tankerville, 10½ to 11; Tincroft, 18 to 18; Van, 38½ to 39½; West Assheton, 1⅞ to 2⅛; Van Consols, 1⅞ to 2⅛; West Chiverton, 16 to 17; West Tankerville, 2 to 2⅛; Wheal Grenville, ⅞ to 1⅛; Almada and Tirito, ⅜ to ⅝; Argentine, 6 to 6¼; Birdseye Creek, 1¾ to 1⅞; Cape Copper, 38½ to 39½; Cedar Creek, ½ to ¾; Chontales, 5-16ths to 7-16ths; Colorado Terrible, 1 to 1⅛; Condes of Chili, 6 to 6½; West Pateley Bridge, 5¼ to 5½; Don Pedro, 3-16ths to 5-16ths; Eberhardt and Aurora, 7¾ to 8; Emma, 1½ to 1⅝; Exchequer, 1⅞ to 2⅛; I.X.L., 1 to 1⅛; Flagstaff, 1½ to 1¾; Frontino and Bolivia, 1⅞ to 2⅛; Javali, ¼ to ⅜; Last Chance, ½ to ¾; New Quebrada, 3½ to 3⅝; Pestarena, ⅛ to ⅜; Richmond Consolidated, 7 to 7¼; Rossa Grande, 1s. to 3s.; St. John del Rey, 380 to 380; San Pedro, 1¼ to 2; Sierra Buttes, 1 to 1½; South Aurora, ⅜ to ½; Sweetland Creek, 1⅝ to 1⅞; United Mexican, 2 to 2½; Blue Tent, 3 to 3¼; Oregon Preference, 4 to 4¼.

COLLIERIES.—Continued dulness is the leading characteristic of the market for colliery shares, in which but little business is doing. This is to be the more regretted as, while the low value of coal and reduction in profits have told upon and reduced the worthless properties to something like their proper level, the shares in those which are really of a *bona fide* nature have drooped and fallen in price simply in consequence of the absence of buyers and the want of recognition of their intrinsic value. As evidence of this it is only necessary to direct attention to the shares of those collieries which are now making good profits and paying dividends, and it will be found that these are selling at nearly as great a discount as some of the calling or unremunerative colliery stock. It should be borne in mind by those who are in want of a steady investment, with a prospect of a good profit, that it is everywhere allowed that coal has reached its lowest market price, and that any colliery now making profitable returns must, under ordinary circumstances, continue to do so, while any alteration in that respect can only be looked for in the shape of a goodly increase. No doubt the coal trade has hitherto gone to a large extent hand in hand with the iron trade, but, while the exports of coal have been steadily maintained, the production of iron has continuously decreased, until at present it may be considered to have reached its lowest ebb. Belgian iron is being imported, and from this those of small experience are prone to draw erroneous conclusions. The importation of foreign iron is, however, by no means unprecedented, and a few years ago iron rails were imported from Belgium into South Wales, right under the nose of the most important ironmaking firms of the district, yet we believe that at no time was the iron trade more brisk, nor the exports larger, than in the years 1872 and 1873, while it is a curious fact that in the coal trade each panic has been succeeded by higher prices. We are only induced to make these remarks from the want of appreciation which some of our best collieries seem to experience, and we have endeavoured to show that many of those now paying fair dividends, and having only a good future before them, should command more favour and better prices. And before leaving this subject we would urge upon shareholders in this class of stock the desirability of supporting the companies of a *bona fide* character where this is necessary. Labour now commands a comparatively low rate, and where capital is required to increase plant or for further development no time could be better than the present. In a word, if a little care be exercised in the selection, no time could be better than the present to purchase collieries and colliery shares, or to further develope good coal properties. We have but lately returned from a tour of colliery inspecting, and while we have found that some collieries (and this is notably the case with small ones) are losing money, there are still many which can wrest a profit from even the present low price of coal, and it is these latter which should command the attention of the investor. The Cardiff and Swansea Colliery, in the Rhondda district, is daily sending to market a large quantity of coal, which is being raised at a fair profit, the market price of the coal being about 10s. to 11s. per ton, this rate being that of the best smokeless steam coal. Shares close at 2 to 3. Bilson and Crump close flat at 7 to 8. This colliery pays 10 per cent. per annum, while the profits are more than sufficient to realise that rate of dividend. There is a sufficiency of coal to last for over a quarter of a century, and we think, therefore, these shares should command a better figure. Some misapprehension seems to be felt as to annexing the adjoining colliery, but this can only be of advantage to the Bilson and Crump, and, provided an arrangement can be brought about, is to be recommended. Going across to North Wales, we come to Llay Hall, the shares in which close at 9 to 9½; Alltami (price of shares 5 to 5⅛, works progressing favourably); and West Mostyn. The preference shares of this last are now at 2 to 3. The sinking is being continued with all speed, the last seam struck being 2 ft. 8 in. thick. Chapel House shares close at 3⅛ to 3¼. The profits are maintained at a goodly rate, being, we are informed, about 2s. 6d. per ton, while the output is kept up to its usual average. The new 16-ft. diameter pit is now down 290 yards, and will be completed to the Park Mine at a depth of 400 yards. At a depth of 275 yards a new seam of coal was struck, 23 in. thick, of which 12 in. was good coal, equal to that now being raised at this colliery, the remaining 11 in. being a good gas coal. Samples of the coal will be sent to the office for the benefit of those who would like to see it. The best thing to be said of this colliery is that the works are going full time, and making a good profit, while purchases of coal are being made in addition, and it is needless to say also at a good profit. Thorp's Gawber shares close at 4 to 4½. Some shareholders, finding that "new brooms sweep clean," express themselves satisfied with the change in the management, though others are inclined to doubt its expediency. It is, however, somewhat hard that when bad times arrived directors should be blamed for that which is beyond their control—reduction of profits through a fall in the price of coal. The eminent firm of G. B. Thorneycroft and Co. have resolved to take the stock of their purposed limited company for themselves. It is curious to note that when so much money as at present is seeking investment such fear of loss is experienced by the investing public that but few subscriptions are forthcoming for even such an undoubtedly *bona fide* concern. New Sharlstone close at 3½ to 4. At Birmingham the present price of coal is—for best, 15s.; furnace, 11s.; and slack, 4s. 6d. Colliery shares close as follows:—Cannock and Huntington, 1¼ prem.; Hamstead, 1 prem.; Ivy House, 1 dis.; Mid-Cannock, 27; Perry Colliery, 1 prem.; Sandwell, 27½; new ditto, 18 prem.; Walsall Wood, ½ dis.

THE NEPTUNE COPPER MINING COMPANY, with a capital of 12,000l., in shares of 1l. each, has been formed to purchase for 2000 fully paid shares the old Charlotte United Mine, described as being situated in the heart of one of the richest copper mining districts in Cornwall, with thousands of pounds worth of available work done, while the lodes have not been exhausted. It is mentioned that the great, and doubtless permanent, advance in the price of arsenic has caused an advance on mundic since the last working of this mine to an extent of about 300 per cent. The mine being drained by adit level renders the erection of pumping machinery at present unnecessary. Old and respected miners assert that large returns of ore will be made on a very small outlay. The dues are low (1-18th), and whilst the protection of the Limited Liability Act is availed of, the company's Articles of Association provide that the basis of operation shall be conducted on the cost-book principle. Thus the directors or committee will be chosen at each meeting of four months by the company, and their remuneration (if any) decided on by the company, thus avoiding the excessive charges often made. There are many other matters of economy also which might be enumerated under this system, which will be obvious to all acquainted with mining business. The promoters have further arranged that the first subscribers for not less than 50 shares each shall be presented with 10 per cent. of the fully-paid shares as a bonus.

FROM A LONDON STOCK BROKER'S CIRCULAR.

The tone of our markets has been decidedly better during the past week, and, with a few exceptions, the changes in prices are favourable. English railways have been much stronger; the closing of large "bear" accounts, and purchases made in anticipation of the traffic returns, which were rather more satisfactory, having caused a general reaction. There are no great changes to note in the foreign market. The riots in Salonica had a depressing effect on Turkish stock, which has, however, rallied again in anticipation of a speedy settlement of the matter. Spanish and Argentines are stronger, but Perus keep dull. Egyptians still attract considerable attention; the publication of a scheme for the unification and consolidation of the debt has been the event of the week, opinions respecting the proposed arrangements are many and various, but the first and general impression was, on the whole, unfavourable, sales being freely made, and the stock declining. The report, however, that Mr. Rivers Wilson has accepted the post of Controller of the Finances under the Egyptian Government has caused the market to improve, large purchases being made on continental account, and operators for the fall being anxious to buy back. United States bonds, Canadians, and all high-class securities are firm, a considerable amount of public money having been of late invested in them. The English funds keep strong. J. Y. WATSON, Jun.

Friday Morning, May 12.

NORTH LAXEY.—The lode in the shaft is full 4 ft. wide, containig quartz, with lead, blende, and copper, the ore being sufficient to save for dressing. On Tuesday new levels will be commenced at 136 fms., which are likely to lead to good discoveries. Capt. Rowe repeats that he considers the mine is now down into a large and settled lode, and also into a change of rock more favourable for bearing lead in steadier and larger quantities than known or seen in the mine before.

ROOKHOPE.—Mr. Blenkiron reports that the adit is being driven at 75s. per fathom; lode worth 30 cwts. (about 20l. per fathom). He has also arranged to put up another rise above the 15, which ground he values at an average of 20 cwts. (about 13l.) per fathom, and which will cost for stoping only 20s. to 30s. per fathom. They have also completed a communication between the 15 and 25 fm. levels, where there are some good stopes. There is a large quantity of ore stuff broken, and 25 tons will be sampled on the 16th inst.

FORTY-THIRD ANNUAL REPORT OF THE

NATIONAL PROVINCIAL BANK OF ENGLAND.—

MAY 11, 1876.

Subscribed Capital, £3,112,500.

Paid up Capital,	On 20,000 Shares of £50 each, £21 paid	£	420,000
	77,500 „ £20 each, £12 paid		930,000
	28,125 „ £20 each, £4 paid		112,500
	Paid in advance of fourth call		252
	Total		£1,462,752

Reserve Fund, £900,000.

Number of Shareholders, 4488.

DIRECTORS.

Right Hon. Lord ERNEST AUGUSTUS CHARLES BRUDENELL BRUCE, M.P.
GEORGE HANBURY FIELD, Esq.
JOHN OLIVER HANSON Esq.
JOHN KINGSTON, Esq.
DUNCAN MACDONALD, Esq.
HENRY PAULL, Esq.
ALEXANDER ROBERTSON, Esq.
JOHN STEWART, Esq.
Sir JAMES SIBBALD DAVID SCOTT, Bart.
RICHARD BLANEY WADE, Esq.
ROBERT WIGRAM, Esq.
Hon. ELIOT THOMAS YORKE.

EDWARD ATKINSON, Esq., WILLIAM HOLT, Esq., } Joint General Managers.

BISHOPSGATE STREET, corner of Threadneedle-street, LONDON.

SOLICITOR.

CHARLES NORRIS WILDE, Esq.

RICHARD BLANEY WADE, Esq., in the Chair.

REPORT.

The directors have much satisfaction in submitting for the consideration of the proprietors their forty-third annual report.

The average rate of discount of the Bank of England for the year was £3 4s. 4½d., being 9s. 5d. less than that for 1874, and the lowest average since 1871, while during the greater part of this time considerable difficulty was experienced in investing surplus funds in undoubted securities at remunerative rates.

The year 1875 will be long remembered by the severe prostration which existed in the more important tranches of trade, by a deficient harvest, and by the many heavy failures which took place among houses of high repute. It will be gratifying to the proprietors to learn that this bank has escaped with trifling loss from these failures, and that they are enabled to propose the following distribution of profits:—

That the dividend and bonus now about to be declared should be 11 per cent. for the half-year—that is to say, the usual 4 per cent. dividend, with a bonus of 7 per cent., making, with the distribution in January last, 21 per cent. for the year.

That £16,165 14s. 10d. be added to the reserve fund, which will then amount to £900,000, invested in Government Securities.

That the sum of £50,000 of undivided profits referred to in last report, together with £641 5s. 6d. now added, be carried forward to the accounts of the current year, Of this policy the proprietors have very cordially approved on several occasions, and it will be remembered that a large amount of the capital represented by the last issue of shares will this year participate in dividends.

The statement of accounts contained herein cannot fail to interest the proprietors. There has been a large increase of deposits and general business during the year, and this is the more gratifying as with a few exceptions it is general throughout the establishment. The number of current, exclusive of a large number of deposit accounts, opened during the year was about 5894.

The following is the summary of the operations for the year, submitted in the form hitherto in use:—

Rest or undivided profits at 31st December, 1874, as exhibited at the annual meeting in May, 1875, viz.:—	£	732,834	5 2
Less bonus declared and paid in cash in July, 1875		110,250	0 0
Total	£	622,584	5 2
And less amount carried to the credit of Building Fund Account.		20,000	0 0
Total	£	602,584	5 2
Add premium on new shares received up to December, 1874		139,860	0 0
Leaving	£	742,444	5 2
Net profits of 1875, after making allowance for bad and doubtful debts, and bonus to officers		321,119	10 4
Making	£	1,063,563	15 6
Add undivided profits from 1874		50,000	0 0
Total	£	1,113,563	15 6
Deduct—			
Dividend on company's stock, paid July, 1875 ..... £57,375 0 0			
Ditto ditto Jan., 1876 ... 58,500 0 0			
Bonus of 6 per cent., ditto ditto ... 86,062 10 0			
Undivided profits to next year		50,641 5 6	= £ 252,578 15 6
Leaving	£	860,985	0 0
Out of these profits the directors propose to declare, in addition to the foregoing dividends and bonus paid to proprietors as above stated, a further bonus of 7 per cent. in July next, making a division of profits in 1875 in all of 21 per cent. upon the paid-up capital, free of income tax, amounting to		102,375	0 0
Total	£	758,610	0 0
Add premium on new shares received during the year		141,390	0 0
Leaving reserve invested in Government securities	£	900,000	0 0

Since the last meeting the Lincoln's Inn Branch of this bank has been opened at 8, Serle street, where business will be carried on until the completion of excellent premises, which have been secured in the immediate vicinity of the new Law Courts. It is believed that this branch will prove a great convenience for the country customers of the bank, as well as a good centre for general business in that part of London.

The directors have also opened a branch at Torquay, a town to which many of the bank's customers resort. This likewise promises to be a useful auxiliary.

The following directors go out of office by rotation, but being eligible for re election, offer themselves accordingly, viz.:—

The Hon. ELIOT THOMAS YORKE
ROBERT WIGRAM, Esq.
ALEXANDER ROBERTSON, Esq.

LIABILITIES—31ST DECEMBER, 1875.

DR.—To paid up capital	£	1,462,752	0 0
Amount due by the bank on deposits, &c.		25,008,536	2 3
Acceptances		602,792	3 7
Reserve fund, 1st January, 1875 ..... £742,444 5 2			
Add premium on new shares 141,390 0 0			
Addition, 31st December, 1875 ..... 16,165 14 10 =		900,000	0 0
Profit and loss balance		153,016	5 6
Total	£	28,127,006	11 4

ASSETS.

DR.—By cash in hand—at Bank of England and branches, at call and short notice	£	4,296,982	4 7
Government securities		3,983,938	2 8
Indian Government and other securities, debentures, &c.		2,732,178	19 2
Bills discounted, loans, &c.		16,654,216	1 1
Freehold premises, &c., in London and country—Total amount £591,691 13 3			
Less at credit of building fund ..... 144,000 9 5 =		447,691	3 10
Total	£	28,127,006	11 4

The above report having been read—it was

Resolved unanimously—That the same be adopted and printed for the use of the proprietors.

Resolved unanimously—That the Hon. Eliot Thomas Yorke, Robert Wigram, Esq., and Alexander Robertson, Esq., be re-elected directors of the company.

Resolved unanimously—That the best thanks of the proprietors be presented to the directors for their very successful management of the affairs of the company.

Resolved unanimously—That the best thanks of the proprietors be given to Edward Atkinson, Esq., and William Holt, Esq., the general managers, and to the branch managers and other officers of the company for their efficient services.

Resolved unanimously—That the best thanks of the meeting be presented to the Chairman for his able conduct in the chair.

Extracted from the minutes by—

E. ATKINSON, W. HOLT, } Joint Managers.

Notices to Correspondents.

*** Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

MANGANESE BRONZE.—Would any one of your readers or correspondents inform the writer, through the Journal, where Manganese Bronze can be obtained, and its price per ton? From the testimony of its value contained in the *Mining Journal*, its usefulness cannot but prove a boon to engineers, as well as the producers of tin.—W.: *City, May* 11.

RIO TINTO—"J. W." (Belgium).—The office of the company is at No. 2, Copthall-buildings, London.

Received,—"C. M. P." (Montreal)—"T. J. P." (New York): The letter has been forwarded. The address appears in this week's Journal—"G. W."—"W. C." (Bolton)—"C. S." (Bangor)—"W. M." (Southampton): It was incorrectly printed—"J. W. S."—"E. J. B."—"F. M."—"R. B. C."—"Shareholder" (Van Consols)—"Old Subscriber"—"Stannum"—"Tenax" (Exon): An announcement of the sale of the property appeared in last week's Journal; you should apply to the solicitors—'G. W. D." (Mining and Undermining): Next week.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, MAY 13, 1876.

THE MINERS' STRIKE IN THE MIDLAND COAL FIELD.

At a time when trade generally is in a more depressed state than it has been for some years, it is a sad thing to find that no less than 25,000 persons connected with the collieries in South Yorkshire and North Derbyshire are now on strike against a reduction of wages. The question then arises, Are there sufficient grounds to justify the coalowners in adopting the steps they have done? The masters say there are, for whilst many of them have been working their collieries at an actual loss, others have been making not the slightest profit whatever, so that the mines have been kept going entirely for the benefit of the workmen. That this is correct is shown by the statements of many of the coalowners, whose veracity can be relied upon, and who felt that they might as well keep their places standing as lose by them. It is also well known that the price of coal is now as low as it was at the close of 1871, to say the least of it, whilst competition for the limited trade doing is exceptionally keen. Contracts are taken now at rates that merely cover the cost of production and incidental expenses, as was shown a few days since by Mr. C. MARKHAM, the managing director of the Staveley Coal and Iron Company, when he stated that in consequence of the present rate of wages he recently and with great reluctance had to decline a large contract for the supply of gas coal, as it could not have been executed except at a positive loss. Coming from such a quarter the statement should afford food for serious consideration on the part of the leaders of the men, so as to place before the latter the actual state of trade, the price of coal, and whether it left any profit or not. The miners are known to be the owners of the Shirland Colliery, and when it has been stated by the managing director that there was a heavy loss on the last half-year's working, that we think should be a sufficient reason for seriously considering the position of other colliery proprietors, who, no doubt, suffered to nearly the same extent. Only a very small margin of profit we feel assured is required by coalowners at the present time, and surely they are entitled to that for the use of their capital. It is not to their interest to keep their pits standing, for they have to keep a staff of men at a considerable cost to look after them and the machinery, whether working or not.

As has been truly said, the wages of the miners of South Yorkshire and North Derbyshire for some years have been much higher than those paid in any other part of the kingdom; and no matter what reduction they submit to, they will even then be much better paid than any of their fellow-workers. But many of them appear to think that their employers should bear all loss, whilst they should not be called upon to make any sacrifice whatever. They also appear to ignore the fact that for the present state of affairs to some extent they are themselves to blame. They had very high wages and very short working hours, and that as a matter of course attracted large numbers to the mines, so that labour during many months has been so plentiful—so greatly in excess of what was required—that men working in most collieries were not able to be employed more than three or at most four days a week.

During the week meetings have been held at several places, as well as at the various lodges, and whilst in some instances the men were willing to accept a reduction of 10 per cent. from the advances given since 1871, others would not accede more than 7½ per cent. We feel sure that neither of those propositions will be entertained by the employers connected with the Association. The miners' secretaries have a hard time of it, seeing that there is no capital to fall back upon to give the men the usual strike-pay. The former have tried to effect a compromise, but this the majority of the lodges have opposed, although the members have all been made acquainted with the position, financial and otherwise, of the Association, whilst they must know that the struggle cannot be carried on much longer in the face of a barren exchequer, and the knowledge that there are hundreds of the miners—some thousands, in fact—who are out, but in no way connected with the Association. Many of these may have already resumed work, and others will most certainly follow, for very many are now suffering privation along with their families. It is generally believed that were a reduction of 10 per cent. off the gross earnings proposed to the masters it would be entertained, and with some prospect of an arrangement being come to, and work at once resumed. If such were to be the result of the proposal we have named it would be the means of keeping what little trade there is from leaving the districts where the strike is now in full operation; and when a more prosperous season returned—as will doubtless be the case, for we are now feeling the reaction that generally succeeds a very active period in which speculation has played an important part, and money being unusually plentiful—higher wages would be secured as the result of the prosperous state of trade. On the other hand, to prolong the struggle is merely to court privation and misery, and a loss that may take years to recover.

COAL IN THE UNITED STATES.

Wonders will never cease! The Americans, who are rather given to copying the English, are beginning to discuss the probable duration of their supply of anthracite coal! So far as is at present known, the anthracite coal of the United States is confined to a few valleys of Eastern Pennsylvania, from the Lykens Valley mines on the west to Carbondale on the east. The whole length of the coal district is about 100 miles, while its average breadth is not quite 5 miles. Mr. SHEAFER, who is well acquainted with the district, and who is an accepted authority upon it, estimates that the first or Schuylkill basin contains 146 square miles of coal land; the second basin embracing the Shamokin, Mahanoy, and Hazleton fields, 126 square miles of coal land; and the third, or Wyoming and Lackawanna basin, 198 square miles of coal land. We thus arrive at an aggregate of 470 square miles of coal land. The average thickness of workable coal in this area of 470 square miles is 60 ft.; this would make the supply amount to some 26,361,076,000 tons. Deducting one-half as likely to be lost in respect of pillars, breakage, waste, &c., we have 13,180,538,000 tons as the quantity of Pennsylvanian anthracite coal which will probably be marketed. Last year about 20,000,000 tons were consumed, and in the 50 years ending with 1870 inclusive, the aggregate consumption was computed to have been 206,666,325 tons. There is thus a good deal of Pennsylvanian coal left available for use; but, on the other hand, the consumption is increasing at a great rate. In 1820 this consumption only amounted to 365 tons all told, and even in 1830 it did not exceed 112,083 tons. In 1840 the consumption had, however, risen to 864,379 tons; in 1850, it had further expanded to 3,242,766 tons; in 1860, to 8,513,123 tons; and in 1870, to 15,113,407 tons; while last year there is believed to have been an advance to 20,000,000 tons, or thereabouts.

Even with a consumption of 20,000,000 tons per annum, the coal supplies of Pennsylvania would not be exhausted for 650 years; but then the consumption has increased to the extent of nearly 12,000,000 tons during the last 15 years, so that at the same rate of expansion 44,000,000 tons will be used in 1905, and in that case the anthracite coal stores of Pennsylvania will be exhausted in 297 years. The fact is the United States have been principally an agricultural country during the first century of their independent national existence, corn and cotton having been the leading products to which American farmers have devoted themselves. But the second century of the career of the American Republic commences with a large development of American manufacturing industry. As population has become denser in some of the older States, the pressure for existence has become a little sharper; and some of the Americans have, at any rate, glided into manufacturing pursuits. This tendency in modern American life can scarcely fail to increase the consumption of coal in the United States, and the strain upon the coal resources of Pennsylvania may become, in consequence, more and more severe. We must not forget, however, that coal is found in other States as well as in Pennsylvania, and that, as the miscellaneous coal resources of the United States are turned to more account, the exhaustion of the black diamonds of Pennsylvania may be postponed. At the same time, the fact must be borne in mind that the coal of Pennsylvania is specially adapted for certain industries, and that there will, consequently, probably be a considerable and increasing demand for it for long years to come.

Pennsylvania owes no small share of her present prosperity to her coal. At a low estimate—that is, assuming the marketable production at 25,000 tons per acre, and taking the profit at 1s. per ton—the coal lands of Pennsylvania are worth for their coal alone 1250*l.* per acre. This calculation is based upon a studiously moderate estimate, but it would be exceeded, assuming that a "breast" of coal 33 ft. wide, 300 ft. long, and 27 ft. thick will yield, with careful mining, 10,000 tons of coal, and that an acre contains generally three such breasts. It is true that the coal lands of Pennsylvania have thus far never changed hands at 1250*l.* per acre; but their value has, nevertheless, rapidly increased of late years. In the Mahanoy Valley, for instance, lands were bought in 1860 at $100 per acre, for which $1500 per acre was refused in 1870. The same lands are now paying an interest of 6 per cent. per annum on $2000 per acre at the low rental of 33 cents per ton. Altogether, it is believed that the anthracite coal deposits of the United States—which, so far as they are at present known, are all contained within half a dozen Pennsylvanian counties—are worth $1,880,000,000 net, a sum which would make a large impression upon the national debt of the American Republic.

THE DRAINAGE OF THE SOUTH STAFFORDSHIRE COAL FIELD.

News of much significance to not a few of our mining localities is to hand from Mid-England. It is notorious that mining engineers throughout most of the South Staffordshire basin have for some time past been sadly tormented with accumulated water in the pits. To so great an extent has this accumulation prevailed in some parts of that district that what is believed to be large tracts of minerals, containing hundreds of thousands of tons of coal and ironstone, are submerged, and will remain submerged forever, unless by some joint action it can be pumped off. Only by such action have small areas, locally termed "pounds," been so drained as to permit of works in operation being kept open. When the country became alarmed about its supply of fuel, and when prices began to ascend, what had long been desired was found to be practicable; individual jealousies and individual interests so far gave way as to make it possible to devise such a scheme for draining, at the expense of all the several districts troubled with accumulated water—the work to be conducted and the money to be levied under the terms of an Act of Parliament. With the leading features of this, the South Staffordshire Mines Drainage Act, our readers are tolerably familiar. The work is, as it should be, divided into two parts—that (1) relating to the drainage of the surface, and that (2) relating to the drainage of the mines proper.

Assisted by a body of commissioners elected by the mine owners the burden of the work devolved upon three arbitrators—Mr. Dowdeswell, Q.C., Mr. Hawksley, C.E., and Mr. Woodhouse. As barrister, water engineer, and mining engineer respectively these men are eminent in their spheres, and efficiently aided as they were by Mr. E. B. Marten, C.E., who is the best authority upon the drainage of South Staffordshire, they have already succeeded in nearly completing the first part of their work. But, in short, for the extraordinary rainfall of the past year or two the surface drainage would have been finished some time ago. Very little remains now to be done before it can be said that the surface operations under the terms of the Act have been wholly completed. Indeed, so far has the surface drainage work been carried out that mining engineers in individual localities most annoyed hitherto by the large extent of water have spoken in very high terms of the comparative ease with which they can now keep the water within reasonable bounds. This, however, has only been done by constant pumping with powerful engines, but all that aid was insufficient to cope successfully with the difficulty: the water gained upon them relentlessly. A traveller passing through South Staffordshire, and witnessing the altered appearance of the surface to be observed mostly in the presence of dry land where before there were "pounds" and lakes between pit mounds would be at a loss to account for the change until he noticed the extensive excavations in progress in the nature of widening and deepening channels for the carrying off of this surface water to its natural outlet beyond the limit of the coal field. All this is to be placed to the account of the carrying out thus far of the terms of the South Staffordshire Mines Drainage Act. The funds have been found by a light tax upon the minerals gotten, and no very grave objection to the payment of the rate has been raised, though, of course, there have been appeals for exemption, accompanied with the threat of a combination to defeat the objects which the Act was beneficiently intended to effect.

Nor have the arbitrators been unable to do anything in relation to the majority of their task. Even whilst the surveys and plans necessary for the carrying out of the underground drainage have been in preparation they have sanctioned the subsidising of pumping engines, which have been known to be doing more work than that called for by the necessities of the mines owned by their proprietors. Thus, relief has been afforded in pressing cases, and the spread of the evil, even apart from the surface work, prevented. In such districts it is easy to understand that colliery owners had great admiration for the Act, and would greatly lament if anything should occur to prevent the realisation of the hopes which are fairly justified by what has been already accomplished. Always supposing, however, that the mines can be drained at a price which will not lay upon them to be liberated a heavier burden than it can bear in the market in competition with newer districts, who have been successful in keeping themselves outside the area to which the operations of the Act are meant to apply. The maximum rental for underground drainage work stipulated in the Act is 6*d.* per ton on all minerals brought up. So extensive is the work to be done in certain of the districts that the arbitrators now find that such a rate will be insufficient to defray the cost of clearing the mines and keeping them clear. There seems, therefore, to be no alternative but to apply to Parliament for further rating powers. At this localities have taken alarm. The Act gives power to any district wishing to cut itself off from the operations of the measure to do so upon such a unity of agreement as shall represent a specified majority of the minerals within that district. Availing themselves of this clause the colliery owners of one district at least, have already secured the requisite number of signatures to a petition for exemption from liability on account of the proposed mine drainage proper, and the Commissioners have no alternative but to allow that district to dissassociate itself from the rest. The district of which we are now writing is Oldbury. If this were all there would not be any great cause for regret, but it happens that a district threatened with a higher rate than Oldbury is likely to be called upon to pay, is moving in the same direction. Such districts, unfortunately, are those which most of all need the interposition of the Act, and they know it. But they are not convinced that it would be most to their advantage commercially to have to pay such a rate as at present appears to be essential.

A heavy rate for underground work, supervening upon a rate which is felt in some instances somewhat severely at a time when prices have fallen to so low a point, without proportionate diminution in other costs, would make it hard for not a few to sell by the side of some of their competitors who are without the drainage area. Of course, the men who are not the most affected by reason of the extensiveness of their own business operations are the first to feel the burden. These, therefore, are the most active in the getting of signatures to petitions now being got ready for presentation, but there are proprietors of mineral tracts which for many years have been waterlogged—and who earnestly desire to be able to work their property—who yet fear that now prices have drooped so sorely, with no immediate prospect of revival, but rather the contrary, it will be impossible to realise what at one time seemed within their reach by the aid of the Act. It is not in all cases of water-logged mines in South Staffordshire where a computation can be accurately made of what quantity of mineral remains to be gotten. Nor is it any less doubtful what in many cases may be the value of the mineral when it has been reached. It is known whether the coal lies in ribs or in ribs and pillars, but it is not known whether, when the ribs and pillars are reached, and are brought down, much of the coal will prove large or much of it small. There can be no doubt whatever that the cost of getting at it will in some instances be enormous. In these days of high-priced materials and labour it is no joke to re-open a shaft and

workings which have been a long time submerged. A colliery engineer need not have a prolonged experience in such a field as South Staffordshire to know that it is sometimes only a little less costly to re-open a drowned-out shaft and workings than to make altogether new ones. In view of the expenses incidental to such work, and of the amount of the drainage rates which it is feared will in one or two districts have to be levied, there are mineowners familiar with the part of the kingdom of which we are writing, and are living there, who are asserting that coal cannot be got under such circumstances so as to be offered in the market at less than very much more than could now be obtained for it. The objections which have specified are spreading so widely in South Staffordshire just now that there is only too much reason to fear that what Oldbury has done some other districts may likewise be successful within a short time in doing. Amongst some of the commissioners, likewise, there is a growing fear that the expenses of the work of underground drainage may prove too costly for the district to bear in a time of so much depression as that which now exists. Most sincerely we trust that what at one time appeared so certain to prove a most beneficent exercise of legislative power may not, even yet, be unaccomplished in all its fulness. A way out of the difficulty may yet be found. Much will have been accomplished by the Act if its operations could for the present be confined to surface work. But if the complete drainage of the mines should have to be abandoned, not only will the regret be deep in the district immediately affected, other districts will have less cause than heretofore to hope for the adoption of a scheme of mines' drainage under the powers of an Act of Parliament.

GOLD IN INDIA.—Reports from Madras say that the Ooregaum gold fields are likely to prove successful in yield, 4 to 6 ozs. of the purest gold having been obtained from 1 ton of quartz, the working expenses being only ½ oz. per ton.

STEEL RAILS IN THE UNITED STATES.—Advices from the United States make an announcement which will be read with some interest by ironmasters—that the receiver of the Detroit and Milwaukee Railroad has purchased 5000 tons of steel rails at $61½ per ton currency. The rails are guaranteed to last for five years.

THE PHILADELPHIA EXHIBITION.—The following is a corrected list of the British judges at the Philadelphia Exhibition. Hardware and Edge-Tools—Mr. D. McHardy, of Aberdeen, and the Hon. A. Bain, Lord Provost of Glasgow. Education—Sir Charles Reed, Chairman of the London School Board. Philosophical Apparatus—Sir W. Thomson, LL.D., D.C.L., F.R.S., Professor of Natural Philosophy in the University of Glasgow. Civil Engineering—Sir John Hawkshaw, F.R.S., V.P. Inst. C.E. Sculpture and Painting—Mr. C. W. Cope, R.A. Industrial Design—Mr. Peter Graham—Vice-President of the Society of of Arts. Metal and Wood Machinery—Mr. John Anderson, LL.D., C.E. Spinning and Weaving Machinery—Mr. W. W. Hulse, C.E., of Manchester. Sewing and Clothing Machinery—Mr. Frederick Paget, C.E. Motors—Mr. W. H. Barlow, F.R.S., V.P. Inst.C.E. Railway Plant—Captain Douglas Galton, C.B., F.R.S. Pneumatic and Water Transportation—Colonel F. H. Rich, R.E., of the Board of Trade. Agricultural Machines—Mr. John Coleman, of the Royal Agricultural Society of England.

COAL AND IRON IN THE UNITED STATES.—In 1875 the estimated consumption of Pennsylvanian anthracite coal amounted to 20,000,000 tons; the deliveries in 1870 did not exceed 15,113,407 tons, so that the trade has grown greatly in importance during the last five years. The demand for English cannel at Boston continues to be confined to retail lots, and prices remain unchanged. Nothing of any consequence has been passing at Boston in Nova Scotian coal. In Cumberland (Maryland) coal trade has so far been right at Boston. Gas coal has been in demand at Boston, and most of the gas companies have concluded contracts for the season. The deliveries of anthracite coal in Pennsylvania to April 17 this year amounted to 3,611,846 tons. The deliveries of bituminous coal in Pennsylvania in the same period were 865,689 tons, making the aggregate deliveries to April 17 this year 4,447,529 tons, against 3,127,407 tons of anthracite and 761,831 tons of bituminous, or altogether 3,889,238 tons in the corresponding period of 1875. Some Pennsylvanian capitalists have recently purchased coal lands in Webster county, West Virginia. The directors of the Chicago, Milwaukee, and St. Paul Railroad report that they laid down 57¾ miles of steel rails last year. American iron rails have been quoted at the works at $42 to $45 per ton currency.

REPORT FROM CORNWALL.

May 11.—If it where not for the material which was supplied by the Dolcoath and East Pool meetings there would be remarkably little to report again this week. But these two meetings, fortunately, do afford some ground not only for comment but for congratulation. It is a matter for very sincere congratulation that East Pool should be able to maintain its dividend in an eight-week account, whereas last time there was a little push to declare it on a nine. And it is a matter of congratulation likewise, quite as hearty in its way, that Dolcoath, which for a short period 10 years ago made no profit at all upon tin, should now with standards 3*l.* lower than they then were, with deeper levels and dearer materials, be able out of tin to profit 50 *l.* a month. It shows what may be done by a good mine with good management, backed by good—that is enterprising, not unreasonable or unreasoning—shareholders. It is an earnest, too, of what will happen in many other cases when the tide for which we have been waiting so long shall turn.

The race of the fault-finders, however, will never cease out of the land; nor, indeed, is there any reason why the free course of criticism at the account-days should be restrained. To be sure, the amount of good done is generally in unwise proportion to the quantity of talk. This will apply also to some of the conversation at Dolcoath. The smelting question is a difficult question, and in some respects an awkward one. But as things are now constituted it is hard to see how matters can be better managed. Committees are fallible even, and they may sometimes stock when they should sell, and sell when they should stock; but, when all is said and done, we are certain that the freedom of their action in this matter is more to the advantage of the adventurers than the laying down of any hard and fast line, only it is of no use pursuing the ostrich policy, and declining to say if stacking is in force what amount there may be stacked, under the idea that the smelters are thereby kept in ignorance. We are very much misfaken if they do not know all that Capt. Josiah could tell them about this matter. As to throwing the tin on the market, as Mr. Rule suggested, it would never answer with such a mine as Dolcoath. The smelters understand each other too well for that, and no effectual step in advance will be taken in this direction until the mines are prepared to do their own smelting.

It is disheartening to read of the little progress that has been made after all the efforts put forth with the Barrow borer. We seem after all that has been said, written, done, and offered as far off as ever almost from the adoption of a good boring machine—one that will either drive more cheaply, or what is the same thing drive more quickly. However, perhaps, the true solution of the present experiment will be in the adoption of the proposal of the Barrow Company to conduct the trial themselves, receiving pay at the rate for hand labour. Mr. Loam's remarks in recommending the acceptance of this offer are worthy of special reference, because they show that the difficulties cannot be insuperable. He says: "The machine is fully maintaining its position in the Barrow district, and in one of their mines the manager has driven a cross-cut which he would not have undertaken by hand from the distance to be driven, and the time it would have taken, and it has opened out a new mine of great and permanent value. It is also being extended into the Cumberland district. I confess I felt mortified to see what it is doing in those districts in the hands of Cornismen, and to find that at home we cannot succeed, and that our men will not try. There the men upon trial so appreciate the machine that they will not, and object to drive rock ground without it. It is this personal advantage to the men themselves that I want our men to see."

The belief that an advance in tin is not far off is evidently very widely held, and is probably well founded. But how could the tin market be expected to be otherwise than dull in the face of the present universal depression.

The Tregardock Mining Company (St. Teath) having failed to make its annual return, according to a recent Act of Parliament, was summoned by Dr. Foster, Government Inspector of Mines for the West of England, at the Camelford Petty Sessions, on Wednesday (the Rev. J. J. Wilkinson in the chair), for not complying with the Act. Mr. Chilcott, of Truro, appeared for the prosecution, who stated that the return forms were sent to the mine at the proper time, and returned to Dr. Foster's office from the Dead Letter Office; but since the summonses had been issued the return had been made. Application had been made by the solicitors of the company to have the summonses withdrawn; this the Government could not do, as it wished to show to the country that this Act must be carried out by all mining companies; and, although 20*l.* was the highest fine that could be imposed, he did not on behalf of the Government press for this amount.—Mr. Male appeared for the company, and said they must plead guilty to not making the return at the proper time, and the fact of the return form being returned to the office of Dr. Foster showed that it had not reached the office of the mine; and, as the return had been made, and crossed the summons through the post, he would leave the matter to their merciful consideration. A fine of 1*l.* was imposed, and no expenses allowed, either for Mr. Chilcott or Dr. Foster, who was also in attendance.

TRADE OF THE TYNE AND WEAR.

May 10.—The Coal Trade has been pretty brisk during the past week in some branches; the demand for steam coal and for house and gas coal has been brisk. The demand for coke has also improved, and prices are stiffer. Most of the coking coal works are making full time, and many other works are improving, but the demand for manufacturing and all inferior coals is still very far from being sufficient to keep the bulk of the works at full time. The coke men at the Byer Moor Colliery struck work last week, and six of them were summonsed at the County Court at Gateshead on Tuesday, when 20s. damages were claimed for the injury caused by the stoppage of the work. The men confessed that they had committed an error, and as they agreed to resume work they were each fined 1s. and the costs of the case.

The Iron Trade is quiet, but a good business is doing in pig-iron, both foreign, inland, and coastwise. A large quantity of pig has been sent lately to Belgium and other countries on the Continent. An average of 5000 tons per week of pig-iron are sent to Scotland. With respect to the price of iron it is nearly down to the level of 1871, and as wages are higher than at the latter period lower prices cannot be taken. To give makers a chance of fair profits it is questionable whether foundry iron ought to be sold under 50*l.* per ton. By the return of makers' stocks an increase of 5579 tons appears in the month, which is entirely due to the interruption of the Easter holiday, which largely reduced the consumption. The furnaces in blast have been reduced to 114. Makers' stocks on April 30 stood at 113,628 tons. The shipping deliveries for the month, foreign and coastwise, are 62,000 tons, about one-third of the whole production. The finished iron trade has not improved at all; there is extremely little demand for rails and bars, and the demand for ship-plates is also falling off.

The market at Middlesborough on Tuesday, though well attended, was the dullest and most unpromising for some time past. There were very few sales, and the prices realised were certainly lower. Taken all round there was a decline of 6d. to 1s. per ton upon the rates of last market. The general quotations of makers were—No. 1, 51s. 6d.; No. 3, 47s. to 47s. 6d.; No. 4 forge, 46s., less 1 per cent. commission. There is a better enquiry for foundry than for forge iron, and the latter has been sold by small holders at prices considerably lower than the figures quoted. There is a fair extent of shipping deliveries, but less iron has, on the whole, been sent out of the Tees for Scotland and the continental trade, while the local and general inland demand is duller than has been the case for a long time past. The merchants are alleged by makers to be endeavouring to "bear" the market in the low prices they quote, but things are now in a very uncertain state. One thing, however, may be set down as decided—that prices of pig-iron cannot go much lower, or makers will to a large extent blow out their furnaces. The decreased consumption shown by last month's returns of stock has had an unfavourable effect upon the trade generally. In finished iron there is nothing fresh to report. Prices continue much about the same. Rails are 6*l.* 5s., ship-plates 7*l.* Bars have been in rather better enquiry, at 6*l.* 12s. 6d.; angles are also rather more sought after. The coal trade is rather better, the demand for South Yorkshire having somewhat increased. Coke also is in steady request.

A COLLIERY MANAGER FINED AND CENSURED.—At the Barnard Castle Police Court, on Wednesday, before Captain Horne and Mr. E. Gerard, Thomas Shipley, manager of the New Copley Colliery, near Bishop Auckland, was charged by Mr. Thomas Bell, Government Inspector of Mines for the Durham district, with neglecting to provide "manholes" on a certain incline plane at the above colliery, in contravention of the 10th general rule of the 57th section of the Act for regulating the working of mines. Mr. Brignall, of Durham, prosecuted. It transpired that a miner, named Metcalfe, had been fined 17s. 6d., at the instance of Shipley, for breach of contract, and when the case was heard a plan was put in showing that there were numerous manholes, the want of which, Metcalfe contended, rendered the colliery unsafe. The evidence in the present case having been heard, the Bench fined Shipley 1*l.* and costs, expressed their sorrow that Metcalfe had been fined, and recommended defendant to repay Metcalfe all costs, and also to recoup him for loss time, otherwise a summons would be granted against him. The fine and costs, 12*l.* 13s. in all, was immediately paid. The colliery is now idle. The Court was crowded.

A dreadful boiler explosion took place on Wednesday at the Felling Paper Mill, on the Tyne, two miles east of Newcastle, by which five persons were killed, and a great damage done to the property. It appears to be urgently necessary that the Government should take some special notice of these dreadful occurrences, by which so many lives are lost annually, and there is no doubt that boilers at factories of all kinds should without delay be placed under Government inspection. It is well known that even at new works very often old second-hand boilers are put down, and the practice must be at the best hazardous. An inquest was held on the bodies of those killed by the explosion at Mr. Gallem's works, Felling, today, but after preliminary proceedings it was adjourned until Wednesday next.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

May 12.—The Iron Trade of South Staffordshire, although not presenting much change upon our last report, is, on the whole, a trifle better. The recent reduction in prices has had the effect of bringing out what few orders for finished iron were in the market, and the pig-iron makers are with cheaper fuel and labour able to reduce their quotations to a standard which allows very little margin for competition on the part of outlying districts. Selling prices for branded iron are on the basis of 8*l.* 10s. to 9*l.* per ton for bars. Common (unmarked) bars range from 7*l.* 5s. to 7*l.* 15s. per ton, and other classes of finished iron are offering at proportionate rates. Messrs. Barrows (Bloomfield) have reduced their prices for plates 2*l.* per ton, being 1*l.* extra to the reduction made in other descriptions. Galvanised iron is only in moderate demand at last week's rates. The better classes of pig-iron, both of cold-air and hot-air make, are fully 10s. per ton lower within the past fortnight, and common pigs are 5s. per ton lower. Common cinder pigs are to be had at 2*l.* 15s. per ton, at which low rate successful competition on the part of outlying centres of production will, to say the least, be less practicable than heretofore. The idea of converting the old and well-known concern of Messrs. G. B. Thorneycroft and Co., Wolverhampton, into a joint-stock undertaking has been abandoned, owing to the limited number of shares applied for, and the works will be carried on by the members of the present firm with the exception of two, who, on account of increasing age and infirmity, have decided to retire from active business life.

The Coal Trade of South Staffordshire has been somewhat better since the recent reduction in prices, but there is still abundant room for improvement, very many of the collieries not being in operation more than about half-time. It seems pretty clear that no great improvement in the coal trade of this district will be experienced until some modification is made in the prevailing hours of labour. If the colliers could be induced to work an extra hour per day it would be better for the coalowners than a further reduction in wages. The ironstone market is flat as regards local yield, consumers in the district being almost wholly dependent upon distant sources of supply.

The following were included in to-day's quotations on the Birmingham Stock Exchange:—Cannock and Leecroft Colliery, 105; Cannock and Huntington Colliery, 1¼ prem.; Hamstead Colliery, 1 prem.; Ivy House and Northwood Colliery, 1 dis.; Mid-Cannock Colliery, 26¼; Perry Colliery, 1 prem.; Sandwell Park, 27½; Spon Lane Colliery, ¼ dis.; Chillington Iron, 3⅜; Darlaston Steel and Iron Company, 3; John Bagnall and Son, 5¼; Pelsall Coal and Iron Company, 4½ dis.; Walsall Wood Colliery, ½ dis.

The North Staffordshire Iron Trade does not present any improvement since our last report. The recent reduction made by the South Staffordshire ironmasters has had an adverse effect upon the trade of this district, buyers looking for a corresponding movement here. Several additional forges and mills have been stopped this week, and ironmasters of experience declare that no such a state of affairs has been known in the North Staffordshire iron trade during the past 14 years.

REPORT FROM THE FOREST OF DEAN.

May 11.—We regret to have to report a continued depression in the Coal and Iron Trades. A notice of a 5 per cent. off the wages at Parkend Ironworks has been given, and it is expected that, unless the tin-plate workers will submit to further reductions of wages, the works at Lydney and Lydbrook will be closed by the proprietors, at least for a time, or until that branch of industry improves. Orders are few at other kinds of works—the whole district, in fact, being all but stagnant, or commercially out of joint, the men at several coal pits this day being at play, as the phrase is—*i.e.*, on forced idleness. We should be glad to report improvement, but at present we see scarcely any signs of coming progress and activity.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

May 11.—The staple trades do not show much improvement, compared with past weeks, although there is undoubtedly a slight movement in iron. Exports are again increasing, and show that the works are principally engaged on Swedish and colonial orders. Two large cargoes have gone to Imbrail, and the Indian demand for rails has been fairly active during the last week or so. The Welsh ironmasters are, it is stated, competing pretty successfully with Staffordshire makers for certain qualities; but Welsh bars are in small demand. At Dowlais things are looking brisk; but at Cyfarthfa, although a small start has been made (to which, however, no significance is attached), business is almost *nil*. The home demand for all descriptions of iron is quiet; and the Transatlantic requirements are not worth mentioning.

As has been frequently stated, the steelworks have presented a favourable comparison to the iron making establishments The general depression has, however, affected them, and now it is stated that at the large steelworks at Landore the men have received a fortnight's notice of the company's intention to terminate contracts. This notice has been given with a view of reducing wages, it is believed, to a considerable extent; but it is doubtful whether this will be done without a strong protest on the part of the men. Tin-plates do not sell more freely, and the restriction of the make is being proceeded with as much as possible.

The Coal Trade is somewhat more active, and in consequence of the disputes which have occurred in South Yorkshire and elsewhere a few more orders have come to this district. Prices, however, do not improve, and great complaints are heard as to their unremunerative character. The prices for coal shipped foreign are said to be lower than has been the case for some time. The weather continues cold for the time of year; and, as a natural consequence, the local consumption of house coals is maintained. The hauliers' strike in the Rhondda Valley has caused the Coalowners' Association to decide on supporting from its funds those colliery proprietors who are affected by the strike. The dispute at the Blaenclydach Colliery between the hauliers and their employers has come to a close, the men resuming work under the old conditions. In the dispute among the colliers at Risca, which had been referred to arbitration, the award has been given, the men having to submit to a reduction of 7 per cent. on last December's prices; the fall to take effect from the beginning of the year.

Meetings have again been held in the district, at which resolutions have been passed in favour of Mr. Macdonald's Compensation Bill.

The depression of trade in the district has already produced a most disastrous effect on the trading community of the district. A large firm of corn merchants has stopped during the last few days, with liabilities said to amount to 60,000*l.* Other firms and tradesmen have also got into difficulties, and should not trade improve no one can estimate what the end will be. Another proof of the stagnation to which the staple trades have been reduced was afforded at the recent meeting of the Newport Dock Company, where the original shareholders did not get a single farthing dividend. The rates for coal tramming have also been reduced at Cardiff.

Four men were seriously injured by the bursting of a blast furnace at Dowlais a few days ago, so much so that three of them have since died.

The case of Rhodes (appellant) *v.* Forwood and Paton, came on appeal before the House of Lords, against the judgment of the Exchequer Chamber reversing the judgment of the Court of Exchequer. The question was one of commission on coal. The appellant entered into an engagement to supply coal from his colliery at Risca to respondents, as his sole agents, at Liverpool. He subsequently sold the colliery before the specified time for supplying coal had ceased, and the present proprietors did not continue to supply the coal. The question was as to whether the appellant had power to sell his colliery, and, if so, whether he ought not to have made arrangements with his successors to continue the supply. Judgment was given for the appellant. Another local case has also been before the Chancery Division of the High Court of Justice—the Nant-y-Glo and Blaina Ironworks Company *v.* Tamplin and Carlton. The question arose out of the formation of the company and the purchase by them of the Blaina and Nant-y-Glo, and Beaufort Ironworks. Mr. Carlton was formerly chairman of the original Blaina company, and seems to have taken a prominent part in calling the plaintiffs' company into existence. The case came before the Court as a motion for an injunction restraining the defendants from selling certain property comprised in a mortgage between the company and Mr. Carlton. The motion was further to prevent defendants from taking any proceedings under the mortgage for compelling payment of the amount of money thereby secured. The injunction was granted on the plaintiffs paying to Mr. Tamplin the sum of 22,000*l.* within a fortnight.

Ten hauliers employed at Treorki have been fined 1*l.* and costs at Treherbert Police Court, for leaving work without leave. In consequence of their conduct the colliery was closed for a day.

THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week there has been no improvement in the amount of business transacted, but prices are now slightly firmer. In shares of iron and coal concerns, Fife Coal is ½ lower; and Ebbw Vale, Marbella, and Monkland, have each declined a smaller extent. The scheme for the reduction of the interest to be paid on the preference shares of the Monkland Company, and other matters, was unanimously agreed to at the meeting of shareholders last week. The Chairman intimated that it was necessary that debentures should be subscribed for to the extent of 25,000*l.* yet. Bilson and Crump is 8 to 8½; John Bagnall and Sons, 5½ to 6½; Industrial Coal and Iron, 3½ to 3, dis.; New Sharlston, 4; and West Cumberland Iron and Steel, 7 to 6½, dis. There is no alteration of importance in shares of copper concerns; Yorke Peninsula (ordinary) remain at 5s. to 7s. There has been more disposition to invest in home mines. Aberdaunant is 11s. 3d., buyers; Bedford United, 21s., sellers; Drake Walls, ¾, sellers; Glasgow Caradon, 1½; ditto (15s. paid), 1; Gunnislake (Clitters), 2¾; Killifreth, 18s. to 19s.; Great Wheal Eleanor, 2½, sellers; Pennerley, 1¼ to 2; Old Treburgett, 8s. 6d., sellers; Prince of Wales, 2s. 6d. to 3s. 6d.; and West Tankerville, 2½ to 2¼. In shares of gold and silver mines, Emmas and Flagstaffs are each about ½ lower. Birdseye Creek, 34s.; Colorado Terrible Lode, 1¼, buyers; I.X.L., ⅞ to 1½; Javali, 6s. 6d., buyers; New Rosario, ½, sellers; Pestarena United, 5s. to 6s. 3d.; Rica, 2s. 6d.; Sweetland Creek, 1¾ to 2; Blue Tent, 3 to 3¼. There is no alteration in oil or miscellaneous companies' shares. Langdale's Chemical, 5 to 5 1-16ths. Details of the several days' business follow:—

On THURSDAY last, excepting Tharsis, little business was done. Bedford United, 19s. 6d., sellers. Benhar done at 10. Birdseye Creek, 31s., buyers. Bolckow, Vaughan, "A," 51 to 52. Chapel House Colliery, 3 5-16ths, sellers. Colorado Terrible Lode done at 1¼. Gunnislake (Clitters), 2¾, sellers. Hingston Down, 14s., sellers. Pestarena United, 6s. 6d., sellers. Prince of Wales, 4s., sellers. Tharsis opened at 19½, but were sold down to 18¼, but an improvement set in to 19, closing 19 to 19½; new shares, 12¾ to 13. Young's Paraffin done at 8 7-16ths and 8¼, closing 8 5-16ths to 8 7 16ths. Scottish Wagon, 10 to 10⅜; new shares, 3⅞ to 4¼.

On FRIDAY market very idle. Birdseye Creek done at 31s. Bolckow, Vaughan, "A," done at 51½, closing 51½ to 52. Langdale's Chemical, 5 to 5¼. Monkland, 1⅜ to 2. Omoa and Cleland done at 2½. Pestarena United, 6s., sellers. Prince of Wales, 3s. 6d., sellers. Tharsis changed hands several times at 19⅛ and 19¼, closing at these prices; new shares done at 12¼ and 12⅝, closing at these prices. Scottish Wagon, 10 to 10⅜; new shares, 3⅞ to 4 1-16ths.

On SATURDAY market again neglected. Armiston done at 7¼. Bedford United, 1, sellers. Blue Tent, about 3. Bolckow, Vaughan, "A," 51 to 51¼. Cedar Creek, ⅜ to ⅝. Gold Run, ½ to ¾. Gunnislake (Clitters), 2¼ to 2⅜. Hingston Down, ¾, sellers. I. X. L., 17s. 6d. to 18s. 9d. Richmond, 7 to 7¼. South Crofty, 14, buyers. Sweetland Creek, 2 to 2¼. Tharsis opened at 19¼, and improved to 19 7 16ths, closing 19⅜ to 19½; new shares done at 13¼, closing 13 to 13¼. Scottish Wagon done at 10 5-16ths; new shares, 3⅞ to 4 1-16th.

On MONDAY rather more business done. Aberdaunant 11s., sellers. Benhar new done at 6. Canadian Copper Pyrites (3*l.* paid) done at 2s. 6d. Dunsley Wheal Phœnix done at 6d. and 3d. Gold Run, ½ to ¾. Gunnislake (Clitters), 2¾, sellers. I.X.L., ⅞ to 1⅛. Langdale's Chemical, 5, buyers. Marbella, 2¼ to 2½. Omoa and Cleland done at 2½. Pestarena United, 3s. to 5s. Richmond done at 7¼ and 7⅜, closing 7¼ to 7½. Scottish Australian, 1½ to 1¾; the sales of coal for the month of February have been 15,210 tons. Sweetland Creek, 2 to 2½. Tharsis opened at 19⅜, and improved to 19 9-16ths, but again fell back to opening price, closing 19⅜ to 19 7-16ths; new shares 13 to 13¼. West Tankerville, 2¼ to 2½. Young's Paraffin, 8 7-16ths to 8⅝.

On TUESDAY market quiet. Bedford United, 21s., sellers. Blue Tent 3, buyers. Bolckow, Vaughan, A, 51¼ to 51¾. Dunsley Wheal Phœnix done at 4s. and 1s. Emma, 1¼ to 1½. Flagstaff, 1½ to 1⅝. Glasgow Caradon new done at 1. Gunnislake (Clitters), 2¼, sellers. Monkland done at 38s. Pestarena United, 5s. 6d. to 6s. 6d. Prince of Wales, 2s. 6d. to 3s. 6d. Richmond done at 7¼, closing 7⅛ to 7⅛. South Crofty, 14 to 14½. Tharsis done at 19¼ and 19½, but improved to 19 5-16ths, closing 19¼ to 19⅜; new shares done at 12⅞, closing 12¾ to 13. West Tankerville, 2½, sellers. Young's Paraffin done at 8 7-16ths, closing 8 7-16ths to 8½.

On WEDNESDAY almost nothing doing. Bolckow, Vaughan, A, done at 51½. Dunsley Wheal Phœnix done at 2s. 6d. Ebbw Vale done at 11, closing 11 to 11⅛. Emma done at 2s, closing 1¼ to 1⅜. Fife Coal, 3½, sellers. Flagstaff, 1⅛ to 1¼. Glasgow Caradon done at 30s. Gunnislake (Clitters), 2¼, sellers. Langdale's Chemical, 5 to 5 1-16th. Pestarena United, 5s. to 6s. 3d. Tharsis done at 19⅛ and 19 5 16ths, closing 19¼ to 19⅜; new shares, 12⅝ to 13⅛. West Cumberland Iron and Steel, 7 to 6¾ dis. West Tankerville, 2⅛ to 2¼. Young's Paraffin done at 8 7-16ths, closing 8 7-16ths to 8¾. Scottish Wagon, 10½ to 10⅝.

YORKE PENINSULA MINING COMPANY (Limited).—The last re-

port (dated March 20 last) from this company's properties is satisfactory. The lode in the 35, east of Hall's shaft, has continued for 4 fathoms more driven worth 50*l.* per fathom, as before. It is now fully 1 ft. of quite solid 20 per cent. ore, and widening, the greatest width attained having been 3 ft.; but it narrowed to 4 in. Attention is directed to the fact that while no great deposits of ore have yet been found, the improvement from level to level is marked; 70 tons of 18 per cent. ore have been sampled for sale, and 90 more, of 15 per cent., are on the mine, dressed and undressed. Capt. Anthony considers large sales may be looked for regularly in future.

Subjoined are this week's quotations, &c., of mining and metal shares quoted on the Scotch Stock Exchanges:—

Capital. Per share.	Paid up.	Dividends. Rate per cent. per annum. Previous.	Last.	Description of shares.	Last price.
				COAL, IRON, STEEL.	
£10	£6	£10	£10	Arniston Coal (Limited)	7¼
10	10	14	9	Benhar Coal (Limited)	10
10	6	14	9	Ditto	6
100	40	12½	7½†	Bolckow, Vaughan, and Co. (Lim.)	A. 51½
10	10	10	10	Cairntable Gas Coal (Limited)	9
10	10	5	nil	Chillington Iron (Limited)	3⅞
32	29	7	½†	Ebbw Vale Steel, Iron, and Coal (Lim.)	11¾
10	5	nil	nil	Fife Coal (Limited)	3½
10	10	—	—	Glasgow Port Washington Iron & Coal (L)	59s.
10	10	—	—	Ditto Prepaid	59s.
10	10	—	—	Lochore and Capledrae (Limited)	6¾
10	10	5	nil	Marbella Iron Ore (Limited)	2½
10	10	5	nil	Monkland Iron and Coal (Limited)	38s.
10	10	7	7	Ditto Guaranteed Preference	4¼
100	100	nil	nil	Nant-y-Glo & Blaina Ironworks pref. (L)	80
6	5	15	nil	Omoa and Cleland Iron and Coal (Lim.)	2½
1	1	12½	12½	Scottish Australian Mining (Limited)	1⅝
1	5s.	12½	12½	Ditto New	8s. 6d.
50	50	10	5	Shotts Iron	78
10	10	10	5	Ditto New, issued at 2½ prem.	10
				COPPER, SULPHUR, TIN.	
4	4	—	—	Canadian Copper Pyrites (Limited)	¾
4	3	—	—	Ditto (£3 paid)	⅛
10	7	20s‖	20s‖	Cape Copper (Limited)	39
2	2	—	—	Dunsley Wheal Phœnix Tin (Limited)	⅛
1	1	12½	12½	Glasgow Caradon Copper Mining (Lim.)	1½
1	15s.	12½	12½	Ditto New	1
10	9	—	5	Huntington Copper and Sulphur (Lim.)	8s.
25s.	23s.	—	—	Kapunda Mining (Limited)	2d.
4	4	—	—	Panulcillo Copper (Limited)	2
10	10	6†	6†	Rio Tinto (Limited)	5¼
20	20	—	—	Ditto, 7 per cent. Mortgage Bonds	14
100	100	—	—	Do., 5 p.ct. Mor. Deb. (Sp.Con. Eds.)	53
10	10	nil	nil	Russian Copper (Limited)	2¼
10	10	25	25	Tharsis Copper and Sulphur (Limited)	19⅛
10	7	25	25	Ditto New	12⅞
1	1	—	—	Yorke Peninsula Mining (Limited)	7s.
1	1	—	—	Ditto, 15 per cent. Guaranteed Pref.	1
				GOLD, SILVER.	
1	1	5	5	Australian Mines Investment (Limited)	9s. 6d.
20	20	—	—	Emma Silver Mining (Limited)	28s.
10	10	—	—	Flagstaff Silver Mining (Limited)	1⅝
5	5	—	—	Last Chance Silver Mining (Limited)	1
5	5	—	35	Richmond Mining (Limited)	7¼
				OIL.	
10	7	2½	5	Dalmeny Oil (Limited)	103s.
10	10	—	—	Uphall Mineral Oil (Limited)	5
10	8½	5	5	Young's Paraffin Light & Mineral Oil (L)	8 7-16
				MISCELLANEOUS.	
50	25	15	15	London and Glasgow Engineering & Iron Shipbuilding (Limited)	20
20	14½	—	—	Peruvian Nitrate (Limited)	13
10	10	8	5	Scottish Wagon (Limited)	10 5-16
10	4	8	5	Ditto New	4

† Interim. ‖ Per share.

Last day for this account May 13; settling day, May 17.

NOTE.—The above lists of mines and auxiliary associations is as full as can be ascertained, Scotch companies only being inserted, or those in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them and such information as can be ascertained from time to time to be inserted in these lists, they will be good enough to communicate the name of the company, with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.

Post Office Buildings, Stirling, May 11.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

May 11.—Nothing just now is nearly so absorbing in North Derbyshire as the miners' strike, and every phase of it is the theme of general conversation amongst all classes. Several attempts have been made to come to an arrangement at one or two of the largest places, but without success, so that there is every probability that the struggle will have to go on until the men are entirely exhausted. Money appears to come in very slowly for the support of the men, whilst the coffers of the Association are empty. All are now looking forward to support from the National Association, the representatives of which at a recent delegate meeting counselled the men to accept a reduction of 10 per cent., which they have not thought well to do. But the men having agreed to refer the question of wages to arbitration (although there is really nothing to arbitrate about), they are entitled to support from the National; but the leaders of that Association know very well that to make weekly levies upon the men at work can only cause a large secession from it. This was the case with regard to the Amalgamated, which at one time numbered 100,000 members, but fell off to such an extent that it not only became bankrupt, but entirely collapsed. There is another point with which the miners in other districts are well acquainted, and that is that the men now on strike have been in receipt of much higher wages than those in any other part of the kingdom, and even with the reduction of 15 per cent. would still be in that position. It is, therefore, not likely that they will willingly subscribe towards the support of men who, if at work on the masters' terms, would be in receipt of considerably higher wages than they themselves are now receiving. As to trade, it remains very much as it has been, although the production of coal has rather increased during the week owing to one or two collieries having resumed work. There has been a great falling off in the tonnage of coal sent to London, especially from Clay Cross, for whilst in March there was sent there over the Midland 12,450 tons, last month it had fallen to 1340 tons. The railway companies have felt in a marked degree the effects of the strike: and there is every appearance that the June half yearly dividend will show a decrease in more than one instance. As an instance it may be said that the Midland alone carried 47,500 tons less of coal in April than it did in March.

Quietness still prevails in several of the Sheffield branches of trade, without any prospect of improvement. Some of the Bessemer establishments are doing a steady business, especially in rails, and there has of late been a rather better enquiry for ship and boiler plates. The stoppage of Brown's and Cammell's does not appear to have affected any other firms, although the collieries belonging to the two companies are still standing. The cutlery departments, as a rule, are quiet; whilst there has been no change with respect to the business doing with the United States, which has been but trifling for a long time past. Edge and other tools have been in fair request for exportation to the colonies. In the district between Sheffield and Rotherham the ironworks have—with one exception, perhaps—been working very well, the foundries being fully employed. At Thorncliffe, where in consequence of the miners' strike the furnaces have been damped out, the foundries have been kept going, seeing that the firms have been in the habit of getting a good deal of the pig they consumed from other makers. A large business is being done in patent metallic pistons at the Railway Foundry, Barnsley, both for marine and other engines. They have been put down at nearly all the collieries and ironworks in South and West Yorkshire, and are still making headway. Several meetings of the colliers on strike have been held during the week in Barnsley and the neighbourhood, and there has been in some quarters a disposition to concede 10 per cent. from the advances made since 1871, instead of 7½ per cent. But even this concession would not be accepted by the collieryowners. The collieries at work are doing very well, the men at some of them working double shifts; and masters, in one or two instances, have been able to obtain a slight advance in price, consequent on the limited production. All the pits, however, belonging to those connected with the Masters' Association are still standing, and will do, until terms are come to. At the High Stile Colliery the men came out on Wednesday, having refused to go on at the 7½ per cent. reduction. Steam coal has been in rather better request; but so many collieries are now standing that formerly sent large quantities to some of the Humber ports, that only a comparatively moderate tonnage is being sent to them from the district.

DENBIGH HALL COLLIERY COMPANY.—The creditors of this company are required to send the particulars of their debts or claims to Mr. Rowland Hill, of Horsley Heath, Tipton, the liquidator of the company, or they will be excluded from the benefit of any distribution of the estate.

Vice-Chancellor Sir R. Malins has appointed Mr. Samuel Lovelock official liquidator of the Saturn Silver Mining Company of Utah (Limited).

Petitions have been presented to the Court of Chancery for the winding-up of the Victoria and Fenton Park Colliery Company (Limited) and the Oriental Telegram Agency (Limited).

Petitions have been presented to the Court of Chancery for the winding-up of the Midland Counties (Ireland) Distillery Company (Limited) and Ifton Rlyn Collieries (Limited).

FIRE-LIGHTERS.—Mr. W. COLE, of Ilfracombe, has patented the manufacture of an instantaneous fire-lighter, which consists in making the same of turf, peat, or bog, and in saturating such material with mineral or vegetable oil, in combination with resin, pitch, or tar.

STEAM CONDENSERS.—According to the invention patented by the Ransom Sulphur Condenser Company, of Buffalo, U.S., a condenser is used consisting of a chamber or vessel, the interior of which is divided into two compartments by a perforated plate or diaphragm. The steam is introduced into the lower compartment and the injection of water into the upper, from whence it falls through the perforated plate into the lower compartment in the form of a shower, and so condenses the steam. An over-flow pipe removes the water from the lower part of the condenser, and pipes are provided for the removal of air.

ARTIFICIAL FUEL—EGG COAL.

A convenient form of compressed fuel is at present being manufactured from anthracite coal dust at the Port Richmond Works, Philadelphia, by Mr. E. F. Loiseau, whose inventions have frequently been referred to in the Journal. The new fuel, which has 5 per cent. of clay added to the coal dust, is agglomerated into balls the size of hens' eggs with a cement made of rye flour and slaked lime. The clay is dried on sheet-iron plates, beneath which is a travelling furnace which runs upon rails. When dry the clay is hoisted and pulverised, and deposited in a wooden receptacle. Close at hand is an iron boiler, 8 ft. in diameter and 8 ft. high, in which the paste is cooked by steam and stirred by revolving paddles. The paste is of the consistency of thick cream, and escapes by a pipe at the bottom of the churn. The coal dust is drawn up an incline in small cars, and thrown upon an oscillating wire screen, which takes out all pieces of slate or small chunks of coal. As the dust falls through it is carried in an endless chain bucket elevator to a bin holding 5 tons. Now the dust and the clay fall down into a curious little machine that measures out just the proper proportion of each, and throws both ingredients of the future fuel into a common receptacle. But while they are dropping into this receptacle they receive a sprinkling of the liquid paste from perforations in an iron pipe. Another chain elevator takes the commingled ingredients up, and deposits them in a huge iron churn holding 6 tons, in which are seven revolving shafts, that swing their great toothed arms about in opposite directions, and thoroughly mix the black grist. The substance is now of the consistency of moist sand. It falls upon a leather band, and is carried to the hopper of the pressing machine.

The pressing machine may be compared to a confectioner's lozenge machine, but is of course on a larger scale; it consists of two iron cylinders 30 in. in diameter, and the necessary apparatus to revolve them. The cylinders are each indented with 870 large molds and 56 small ones, and as the molds on the two come together they press the soft mixture into shape, and afterward drop the egg-like chunks upon a moving wire-cloth belt below. The larger pieces weigh 2¼ ozs. each, and the smaller ones ½ oz. To dry the egg coals they are dropped upon another wire belt that carries them into a great oven heated to a temperature of 250°, and fall successively upon still other belts travelling in opposite directions until they have gone the length of the oven five times. When they come out they are ready for burning, but must be water-proofed to protect them from dissolution if caught in a rain-storm. For this purpose another travelling wire belt, across which there are upright partitions of wire, catches them and gives them a bath of two seconds in an iron tank containing a solution of candle-gum, which is a residuum of paraffin, and crude benzine. The tank is inclosed to prevent the escape of the fumes. From the tank the coals go to a big bin called the evaporator, which holds 15 tons. The benzine fumes rise through pipes to a condensing coil, and the recovered liquid is conducted back into the tank from which it ran into the bath. After remaining about an hour in the evaporator, the coals fall upon another moving belt, which deposits them in the final receptacle—the pocket—from whence they roll into the coal carts.

The entire process, from the time the clay and coal dust are brought into the mill until the waterproofed balls are ready for delivery into the carts, is automatic, and the cost per ton of fuel treated is almost nominal, so that even selling the egg fuel at 4s. per ton below the round coal, whence the slack is derived, there still remains a large margin for profit. Each set of machinery is equal to 150 tons per day, and as contracts have been entered into for the whole of the slack at the Richmond wharves, and for large supplies from the Lehigh district, it may be anticipated that the fuel will shortly be in the market.

THE MINERALS OF THE YORKSHIRE COAL FIELDS.

At the meeting of the West Riding Geological Society, held last week at Barnsley, the following valuable and exhaustive paper on the above subject was read by Mr. HOLGATE, of Leeds:—

The immense quantities of iron which, in the form of various oxides and carbonates, combined with earthy matter of different kinds, lies all over the world, and in every geological formation, is in a great many places of no use, owing to the want of means for reducing it into the metallic state. Its reduction into the state of pig, or that in which it may be cast into any required form, and its manufacture into the malleable state and steel, in which state it may be worked under the hammer or drawn out by means of rolls into bars, is dependent upon the means of obtaining fuel, a large quantity of which is required for its manipulation, and upon a plentiful supply of substances which are not fusible at high temperatures, nor chemically acted upon by either the fuel in its burning state nor by iron in a state of fusion. Thus the iron ore of Spain, though of no use in that country, owing to the want of fuel with which to reduce it, is brought to England in large quantities to be mixed with the iron ores of this country, so also the iron ores of North Yorkshire, which are in the oolite formation, would not be of so much use but for their contiguity to the Durham coal field, with its attendant fire-clays, and these supplies of iron ore, fire-resisting minerals, and fuel in such large quantities, make this iron the cheapest in the world. The district known as the Yorkshire coal field (from Leeds southward), contains within itself in its ganister fire stones and various fire-clays, its carbonaceous iron ores, and its excellent coals, all the minerals necessary for the making of the very best of iron that can be produced. Why this is so may, perhaps, be best explained if we first ask what we require in these substances.

FIRE RESISTING MINERALS.—The requisite materials for withstanding heat are very various, and have to be varied with the kind and quantity of heat used, they must be of such a nature that the substances heated in the furnaces or crucibles made of them do not decompose them, nor must they combine chemically with the substances heated if it can be avoided. Thus graphite crucibles are perhaps with the best for resisting absolute heat, but when used for melting steel are considered to deteriorate it by combining chemically with the steel, and so making it to contain too much carbon. Silica, as you know, it is practically impossible to melt, but at the same time a furnace made of silica would be of no use, because heating and cooling it would crumble it into sand, though it would not melt it, and for the same reason crucibles have not to be made of pure silica. Rapidly heating or cooling influences this very considerably, as does also the temperature to which it is raised: we have, therefore, to find materials containing silica with such a proportion of alumina and an alkaline earth, such as lime, potash, or soda, as will combine chemically and flux with it to such an extent as to prevent its crumbling down, and at the same time not so much as to allow it to flow into a liquid. It will be seen that these proportions will vary with almost every one to which these materials can be put, for it would be a waste of labour and expense to provide the same substances for moderate temperatures which we are absolutely compelled to provide when high temperatures must be used. But besides this, as furnaces are only heated on the inside, and as they must be made sufficiently thick to bear the wear and tear to which they have to be subjected, the bricks, which are bad conductors of heat, are heated only to a little depth, and as they are also weak, the consequence is that many fire-bricks, even those that are considered of good quality, become worn out, not by wearing away, by gradual fusion, but by breaking off to the depth that has been heated, and these pieces that snip off sometimes fall into the furnace at once, and others remain half detached from their original brick, and when the heat is got up again it gets behind this detached piece and fuses it into the form of drops, which if they fall on the iron make a bad forging. It has been attempted to prevent this in the case of the fire bricks used for some of the Durham coke ovens, which, as you know, have to be often heated and then suddenly cooled to a certain extent by injecting water in order to cool the coke before it is drawn out, by making them considerably less in section than the ordinary size, but of the same length. It is also sometimes attempted instead of building furnaces with the ends of the bricks presented to the heat, to build them in a double thickness with the side of the brick presented so as to allow the inner row of bricks to expand, but it is clear that if a single brick gives way the flame will get behind that thickness of bricks and will soon bring down the whole side. Fire-bricks, therefore, will be better and last longer if they contain a substance which will so conduct the heat through the brick as to make the expansion more regular, even though this substance does not improve its infusibility; this quality seems to hold in bricks containing a somewhat greater proportion of peroxide of iron than the ordinary fire-brick.

The minerals to meet these wants are found in the ganister, which lies in the coal measures, just above the millstone grit, both at the north and west boundaries of the coal field—from Leeds by Bradford, Halifax, Huddersfield, and Deepcar, and in the fire clays which underlie some of the coal seams. Some of the millstone grit, and other stones also, resist moderately high temperatures. The ganister is a hard siliceous sandstone, which has at one time been fire clay, and in the neighbourhood where the best of it is found it will contain about 97 per cent. of silica. In the vicinity of Leeds it is worked at Meanwood; it is also worked at Laister Dyke, near Bradford, and though not equal to Sheffield ganister, it is so near it that the cost of carrying the Sheffield ganister to Leeds outweighs its superiority. It is full of the rootlets of the trees which have formed the coal seams which generally overlie it, and it breaks into irregular pieces, being very hard and brittle, and it cannot be used for building purposes. It is used after being ground for lining cupolas for melting iron, furnaces for melting steel, and Bessemer converters. In all these it has to be often replaced, as it cracks away; but it is not suited for making crucibles for steel or glass, because it would crack away too rapidly or fall into a powder. It is ground and mixed with fire-clay and other sandstones to make what are called silica bricks, but these bricks, though used for very high temperatures, can only be used where the temperature is constant and regular, and are not suitable for furnaces which are subject to great and rapid variations in temperature, as they crumble to pieces. The bricks made from the fire-clay which is found among the ganister measures underlying the Halifax hard bed of coals at Shipley, near Bradford, is, perhaps, the best suited for the building of reverberatory furnaces, while those made from the clay found in the same measures in the neighbourhood of Huddersfield has long held the reputation of being the best for glass furnaces, and I think would also build good iron furnaces, as they expand and contract without cracking, and do not form into drops as so many other fire-bricks do. These clays contain a larger proportion of peroxide of iron than is found in the other clays of the district. The clay underlying the Moor Better Bed coal is of a very good quality, and is made not only into fire-bricks but into sanitary tubes, chimney pots, and terra cotta work of all kinds. It is found as a fire-clay only to the east of Farnley, but at Farnley Bowling and Leeds Moor it sometimes becomes a ganister.

The fire-bricks made from this clay are those in general use in this district, and are very beautiful in appearance. They are used in building all kinds of furnaces whatever, from the fire-backs of our homes to steel furnaces. The Stanningley clay, which is used for crucible pots, is lower—40 or 50 yards below soft coal—in the rough rock. Many of the sandstones of this district are well adapted for general building up to moderate temperatures, and before the very general working of the fire-clays, which is of quite recent date, they were largely used, and are still by some people. The ground ganister, which is sold in Sheffield, often contains a considerable amount of other sandstone ground with it when not required for the highest temperature, in order to prevent its breaking down. A rough stone from the millstone grit, found near Moor Allerton, Leeds, when ground into sand makes a very good reverberatory furnace bottom, and the flagstone in the quarry near Armley Midland Station has been used to a considerable extent for building furnaces of glasshouses, and Newcastle firestones are still offered for sale for this purpose. A sandstone which is found at Deepcar possesses also fire resisting properties, and I have no doubt that many of the sandstones if tested would be found to resist heat to a considerable extent; the great drawback to their general use is their want of homogeneousness, and though the stone of one part of a quarry will resist heat well, that in another part might only resist it in differently.

IRON.—Iron, as you know, is used for its strength, of which it is the symbol; how differently different iron performs this function everyone is not aware. Thus some iron is of such a brittle nature that it will break with the least shock, while other iron, though no stronger under a pull or thrust applied gradually, will bear a heavy weight applied suddenly, and this is principally what constitutes the difference in the quality of iron, for it is of the greatest importance that our structures should not only be strong under regular weights or work, but that they should stand when this weight or work is applied suddenly. I may at once say that the iron made from the ores found in the Leeds and Bradford districts are the best in the world that can be produced in any quantity, and as a pig iron cannot be beaten as it is made by the proprietors of collieries into wrought iron, which is formed into crank-axles for locomotives, wheels, wheel-tyers, and boilers for the same, crank-axles and screw shafts, and boilers for steamers, and, indeed, for any purpose where the cost is not so much an object as safety, and where the result of breakage would be disastrous, as would be the case in a ship at sea, and as we often see in locomotive breakages. In some places iron is made from magnetic ore directly into wrought-iron of very good quality by melting it in small hearths with charcoal, but in this way it is only made in very small quantities, quite inadequate to supply the demand for iron of best quality. In the vicinity of Leeds and Bradford, however, it is made largely, but the supply of ore must in a short time become worked out, as although iron nodules are diffused all through the coal measures of the district, it is in such small quantities as not to be worth working. In some places what is found as they are working other minerals is sold to the blast-furnaces. The ironstone which is worked is in three bands of balls, which lie at about 2 ft. above the black bed coals, which when added together would make a seam of about 4 or 6 in. in thickness its value may thus be judged, for in the Cleveland district the ores sometimes attain a thickness of 30 ft. Then, arising from this thickness of only 4 or 6 in. we only get a yield of iron of some 30 to 35 per cent.

[*To be continued in next week's Mining Journal.*]

LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Ap. 28	Esgairmwyn	10	£13 10 0	Panther Lead Company.
May 1	Lisburne—Frongoch	50	14 8 0	Nevill, Druce, and Co.
—	„ — ditto	50	14 6 6	Sheldon, Bush, and Co.
—	„ —Graigoch	27	14 3 6	Panther Lead Company.
3	Great Darren	12	19 12 6	Burry Port Company.
5	Minera	41	14 15 6	Sheldon, Bush, and Co.
—	ditto	62	14 10 0	ditto
—	ditto	60	14 13 6	ditto
—	ditto	39	14 16 0	Nevill, Druce, and Co.
—	ditto	24	14 17 6	Sheldon, Bush, and Co.
—	ditto	8	14 17 0	Nevill, Druce, and Co.
8	Great Laxey	100	23 13 0	ditto
10	Ystumtuen	20	12 19 0	ditto
11	Talargoch:—			
	Maesyrewddu	45	14 17 6	Walker, Parker, and Co.
	Coetia Llys	45	15 4 6	ditto
	North Hendre	40	14 12 6	ditto
	Rhyd Alun	10	14 2 6	ditto
	Great Fron Fownog	15	14 14 6	ditto
	ditto (grey ore)	3	10 10 6	ditto
	Pennerley	80	14 12 6	Burry Port Company.
	Old Treburgett	21	27 1 6	ditto
	ditto	10	19 17 6	ditto
	Roman Gravels	50	15 6 0	Panther Lead Company.
	ditto	50	14 17 6	ditto
	ditto	50	15 2 6	Burry Port Company.
	ditto	50	14 17 6	George Burr.
	Ladywell	20	14 13 6	Burry Port Company.
	West Tankerville	25	15 2 6	ditto
April & May	Powell Consolidated	12	14 12 0	Nevill, Druce, and Co.
	ditto	16	14 5 0	ditto

BLENDE.

Date.	Mines	Tons.	Price per ton.	Purchasers.
May 5	Minera	40	£ 5 14 0	Richardson and Co.
—	ditto	16	5 10 6	ditto
—	ditto	39	5 8 6	ditto
—	ditto	30	5 14 0	ditto
—	ditto	18	4 11 0	ditto
11	West Tankerville	20	5 10 6	Villiers Spelter Co.
12	Cwmbyr	20	5 15	ditto

TO CONTRACTORS.

HALKYN DISTRICT MINES DRAINAGE.

REPAIR OF MINING TUNNEL, AND DRIVING CONTINUATION THEREOF.

THE HALKYN DISTRICT MINES DRAINAGE COMPANY (incorporated by Special Act of Parliament) are prepared to RECEIVE TENDERS for CLEARING, REPAIRING, and in part LINING with CAST-IRON TUBBING, the HALKYN DEEP LEVEL, and driving a further length thereof, at Halkyn, about two miles from Flint Station, on the Chester and Holyhead Railway.

Drawings and specifications may be seen on and after the 10th instant, at the offices of the engineers, Messrs. JOHN TAYLOR and SONS, 6, Queen-street-place, London, E.C.; or of the undersigned, where copies and forms of tender will be supplied on a deposit of £5 5s. being made, which will be returned to applicants sending in *bona fide* Tenders.

Tenders will be received for the whole of the works, or separately, as follows:—

No. 1.—REPAIRS OF 412 YARDS OF TUNNEL.
No. 2.—REPAIRS OF 114 YARDS OF TUNNEL.
No. 3.—DRIVING 1280 YARDS OF TUNNEL.

Sealed Tenders in the form supplied, and marked "Tender for Drainage Works," are to be addressed and sent to the undersigned on or before Tuesday, the 30th instant.

The company do not bind themselves to accept the lowest or any Tender.

JAMES WAKEFIELD, Secretary.

16, Corn Exchange Chambers, Chester, May 1st, 1876.

VALUABLE NORTH WALES SLATE QUARRY.

THE DIRECTORS of a SLAB COMPANY, who have a MUCH LARGER ESTATE than they are able to work, are WILLING TO DISPOSE OF A PART on most advantageous terms.

The property is held on lease for 40 years from March, 1863, and the portion now advertised adjoins a working quarry, so that its actual value can be readily ascertained. Ample water power and a tramway to a good shipping port, with easy terms of carriage.

Apply to JAMES HEYS ATHERTON, Public Accountant, 4, Union Buildings, 16, North John-street, Liverpool.

INTIMATION.

THE BRITISH DYNAMITE COMPANY (LIMITED)

beg to intimate that they intend REMOVING the head quarters of their Cornwall and Devon Agency to REDRUTH, and that they have APPOINTED Messrs. WM. RICH AND SONS, of that place, as their AGENTS.

On and after 2 th April Capt. STEPHEN WILLIAMS, of Albert-street, Camborne, will CEASE to REPRESENT the company, and ALL MONEYS DUE to the company for Dynamite sold in the district by Capt. Williams must, after that date, be PAID to Messrs. WM. RICH AND SONS, who are authorised to collect the accounts at present outstanding, and to take over the business.

Additional magazine accommodation will shortly be provided to meet the increasing demand for Dynamite in the district, and the company trust by the new arrangements they have made to merit a continuance of the confidence and favour which their customers have hitherto shown them.

ALEXR. A. CUTHBERT, Manager.

7, Royal Bank-place, Glasgow, 12th April, 1876.

INTIMATION.

WE BEG TO INTIMATE that we have COMMENCED BUSINESS here as MINING AGENTS and COMMISSION MERCHANTS, under the Firm of WILLIAM RICH AND SONS.

The BRITISH DYNAMITE COMPANY (LIMITED), of Glasgow, have entrusted us with the MANAGEMENT of their CORNWALL AND DEVON AGENCY, and from the excellence of the Explosive for all kinds of Mining Operations, and the satisfactory arrangements we have made as to Magazines and delivery in the district, we can confidently appeal to our friends for support.

4, Basset-street, Redruth, April 18, 1876.

TANKERVILLE MINING COMPANY (LIMITED).

Notice is hereby given, that the Directors of the Tankerville Mining Company (Limited) have THIS DAY DECLARED a DIVIDEND of FIVE SHILLINGS per share (free of income tax), payable on and after the 23rd inst.

Notice is hereby given, that the Transfer Books of the company will be closed from the 13th to the 23rd inst., both days inclusive.

By Order of the Board,
J. H. MURCHISON, London Manager and Secretary.

9, Austinfriars, London, May 3, 1876.

MANX SILVER-LEAD MINERAL COMPANY (LIMITED).

In consequence of the recent valuable discoveries, and the large number of applications for shares, the SHARE LIST in this promising Mine will be CLOSED JUNE 30th, 1876.

W. A. HOLLOWAY, Managing Director, Douglas, Isle of Man.
GEO. W. HUGHES, Secretary, 4, Cable-street, Liverpool.

N.B.—No smaller number than twenty-five can be allotted.

WHEAL MARY ANN MINING COMPANY.—Notice is hereby given, that ALL PERSONS who are INDEBTED to the said Company are requested to PAY THE AMOUNT OF SUCH DEBTS to me, the Undersigned, on or before the 31st day of May next.

And ALL PERSONS WHO HAVE ANY CLAIMS AGAINST THE SAID COMPANY are requested to FORWARD FULL PARTICULARS thereof, together with a STATEMENT OF THEIR ACCOUNTS and the nature of the securities (if any) held by them, to me, on or before the said 31st day of May next, after which date the ASSETS of the said company will be DISTRIBUTED, having regard only to such claims of which notice shall have been given.

On behalf of the Committee,
3rd May, 1876. WM. GEO. NETTLE, 2, Dean-terrace, Liskeard.

A NEWLY-DISCOVERED LODE.

THE ABOVE is near LLANGYNOG, OSWESTRY, in a MINERAL GROUND. It is to be seen on the surface for about 20 fathoms, and can be worked at very little expense. A party of working men have it in hand now, and it can be had on easy terms. A good chance for a gentleman or gentlemen with little capital.

For further particulars, apply to THOMAS MEREDITH, Miner, Llangynog, near Oswestry.

THE ADVERTISERS have the DISPOSAL, FOR SALE, of a VALUABLE and EXTENSIVE TRACT of MINING GROUND in CORNWALL, of which they hold a lease direct from the Duke of Cornwall, for a full term of twenty years. The Mine chiefly yields copper and silver-lead; the assay of the lead shows the result of from 22 to 26 per cent. of silver. The situation of the property is in the neighbourhood of the Chivertons, in the parishes of Langwith, Trevassic, and Ruston, near to St. Columb Minor, and near to New Quay, in Cornwall. The proprietors now find themselves short of funds, and they invite parties to tender for the purchase of the same.

Apply to Mr. GEO. HEWETT, No. 2A, The Tower House, The London Road, St. Leonard's on Sea, Sussex.

TO PUBLIC COMPANIES.

OFFICES TO BE LET, close to THAMES EMBANKMENT and TEMPLE STATION and NEW LAW COURTS, newly erected. Each floor with seven well-lighted rooms *en suite*, and with separate W.C.'s and lavatory, or would be subdivided. Capital strong rooms.

Apply to Messrs. ARDING, BOND, and BUZZARD, Surveyors, 22, Surrey-street, Strand.

GLASGOW AND THE HIGHLANDS.

ROYAL ROUTE VIA CRINAN AND CALEDONIAN CANALS, by Royal Mail Steamer, IONA, from GLASGOW, daily at Seven A.M., and from GREENOCK at Nine A.M., conveying passengers for the NORTH and WEST HIGHLANDS.

See Bill, with Map and Tourist Fares, free, at Messrs. CHATTO and WINDUS, Publishers, 74, Piccadilly, London; or by post from DAVID HUTCHESON and Co., 9, Hope street, Glasgow.

MESSRS. W. J. TALLENTIRE AND CO., STOCK AND SHARE BROKERS, 20, CHANGE ALLEY, CORNHILL, LONDON, E.C.,

Transact business in Stock Exchange Securities and Mining Shares of every description, either for immediate cash or the usual bi-monthly settlements, and also afford advice personally or by letter to executors, trustees, capitalists, and investors of every class in the selection of Securities for safe and profitable investment, their experience of the markets, extending over a period of more than sixteen years, together with special facilities for acquiring information, enabling them to act successfully for clients.

They have established Corresponding Agencies in all the principal towns of the United Kingdom, and are prepared to deal in the various local Stocks and Shares at close prices. Orders per post or telegraph receive prompt attention.

INVESTORS SHOULD APPLY for a copy of Messrs. W. J. TALLENTIRE and CO.'s Circular, SENT POST FREE. It contains valuable information on Foreign Stocks (especially South American, Egyptian, and Turkish), Railways, and Lead Mines.

MESSRS. J. TAYLOR AND CO., 86, LONDON WALL, LONDON, E.C.,

MINING ENGINEERS AND INSPECTORS, STOCK AND SHAREDEALERS.

Have business in the following at close rates:—Ambrose Lake, Devon Consols, Great Caradon, East Van, Glyn, Great Lixey, Llanrhaiadr, Marke Valley, North Basset, North Prince Patrick, Patcley Bridge, Pennerley, Penstruthal, Roman Gravels, Rookhope, Tankerville, Van, Van Consols, and West Tankerville.

Argentine, Condes, Eberhardt, Richmond, and South Aurora.

CAPTAIN ABSALOM FRANCIS MINING AGENT, ENGINEER, AND SURVEYOR GOGINAN, ABERYSTWITH.

MR. J. S. MERRY, ASSAYER AND ANALYTICAL CHEMIST, SWANSEA.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the NORTH WHEAL CROFTY MINING COMPANY (LIMITED).—By the direction of His Honor the Vice-Warden, Notice is hereby given that, on the 22nd day of May instant, at the Registrar's Office at Truro, in the county of Cornwall, at Eleven o'clock in the forenoon, this Court will PROCEED to MAKE a CALL of ONE POUND FIFTEEN SHILLINGS PER SHARE on all the contributories of the said company settled on the List of Contributories as present members thereof. All persons interested therein are entitled to attend at the time and place aforesaid to offer objections to such call.

JOHN HENRY HAMLEY, Official Liquidator.

Dated Stannaries Court Office, Truro, May 8, 1876.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the WHEAL WREY, LUDCOTT, AND NORTH TRELAWNY MINING COMPANY (LIMITED).—Notice is hereby given, that a PETITION for the WINDING-UP of the above-named company by the Court was, on the 9th day of May instant, presented to the Vice-Warden of the Stannaries by Thomas White, John Dunstan, John Ainge, Michael Williams Bawden, Lewis Ough, Matthew Daniel, John Hodge, James Henry Alger, James Venning, and Thomas Broad, all of Liskeard, within the said Stannaries, contributories of the said company, and that the said petition is directed to be heard before the Vice-Warden, at the Prince's Hall, in Truro, within the said Stannaries, on Friday, the 26th day of May instant, at Ten o'clock in the forenoon.

Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioners, or their solicitor, of his intention to do so, such notice to be forthwith forwarded to P. P. Smith, Esq., Secretary of the Vice-Warden, Truro.

Every such contributory or creditor is entitled to a copy of the petition and affidavit verifying the same from the petitioners, or their solicitor, within 24 hours after requiring the same, on payment of the regulated charge per folio.

Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 23rd day of May instant, and notice thereof must at the same time be given to the petitioners, or their solicitor

J. G. CHILCOTT, Truro.

Dated Truro, 11th May, 1876. (Solicitor of the said Petitioners.)

IMPORTANT SALE OF VALUABLE COLLIERY PLANT, &c.

No longer required for the purposes of the colliery.

MESSRS. COTTINGHAM AND HILL have been favoured with instructions from the Coppa Colliery (Limited), Mold, Flintshire, TO SELL, BY AUCTION, at the colliery, on Tuesday, the 16th day of May next ensuing, at Eleven o'clock in the forenoon prompt, several good and useful STEAM PUMPING and WINDING ENGINES and BOILERS, SETTS OF PUMPS, L and ⊥ BOBS and RODS, steam and water pipes, head gears, pulleys, ropes, &c., &c.

Catalogues will be issued after Friday, 5th of May, and may be had at the colliery office, and from the Auctioneers, Grosvenor Chambers, 2, Newgate-street, Chester.

IN THE MATTER OF THE COMPANIES ACTS, 1862 AND 1867
AND OF THE
ST. AGNES CONSOLS MINING COMPANY (LIMITED).

TO BE SOLD, BY AUCTION, BY MESSRS. COOPER AND GOULDING, at the Auction Mart, Tokenhouse-yard, in the City of London, on Thursday, the 18th day of May, 1876, at One o'clock precisely, by direction of the Liquidator (subject to such conditions as shall be then and there produced), ALL the BENEFICIAL INTEREST of the said company of and in the several SETTS under which its mining operations have been carried on, in the parish of St. Agnes, Cornwall, together with the WHOLE of the MINING PLANT, MATERIALS, and EFFECTS, of which an inventory may be inspected at the offices of the Auctioneers, or at the mine, fourteen days prior to the date of sale.

For leave to inspect, apply to the Agent at the Mine, or to Messrs. COOPER and GOULDING, 70 and 71, Bishopsgate-street Within, London, E.C.

SHARES IN A CELEBRATED MINING PROPERTY IN CHILI,

YIELDING LARGE PROFITS, FOR SALE.

TO BE SOLD, BY AUCTION, at the Mart, Tokenhouse-yard, in the City of London, on Tuesday, the 23rd day of May, 1876, at Two o'clock precisely, by MESSRS. DRIVER, in One or more Lots,

THREE SHARES (in Chili designated Barras) in the CARRIZALILLO MINING COMPANY. The company is divided into 24 shares only.

The CARRIZALILLO COMPANY own the celebrated DESCUBRIDORA MINE, and the three adjoining setts of SAN JUAN, CANCHAS, and SAN FRANCISCO, which are all worked under one administration, and are situate about thirty-three miles from the Port of Pan de Azucar, from whence there is a good road.

The DESCUBRIDORA MINE has been working since 1859, and has yielded large profits. There are two steam-engines at work, one of 20-horse power and one of 8-horse power, for drawing, and there is also a newly-erected powerful engine, with Blake's crusher attached; by the use of the latter the company is enabled to dress and return the large accumulation of low-produce ore, which will now give a considerable profit. The mine is in thorough working order, and well stocked with materials, rails, jiggers, crushers, &c.

The adjoining setts of SAN JUAN, CANCHAS, and SAN FRANCISCO were acquired for the purpose of securing the ground around the Descubridora Mine, and they have since been worked on a limited scale. There is also a shop, which supplies the workpeople, and also horses, carts, and mules.

Also the VEGA WASHING AND JIGGING ESTABLISHMENT, with yards, houses, shop, and stores, about nine miles from Descubridora (a tramroad is being laid down from the mine, which will greatly lessen the costs of carriage to the Vega). There are also dwelling-houses, bake-house, yards, store-rooms, ore-floors, and mole at Pan-de-Azucar, with convenient launches for use in loading ships with the ore; and there is also belonging to the company a quinchique establishment, a watering place, situate about eleven miles from Pan-de-Azucar, on the road to Descubridora, with dwelling-house, shop, store, mule yard, water carts, mules, and harness; and in Chanaral Port a dwelling-house of eight rooms, and spacious balcony and store below, with good counting house.

The company also have at Chanaral other houses and sites, and also a complete condensing apparatus, with four boilers, &c.

Two-thirds of Descubridora, San Juan, Canchas, and San Francisco, with some other property of comparatively small value, were sold in 1872 for the aggregate sum of £90,000, and since then profits have been divided much more than sufficient to repay the purchase-money, and there is every prospect of Descubridora continuing to give large profits for a considerable time.

Printed conditions of sale will be shortly ready, and further particulars can be obtained in Chili from ROBERT PEEBLES, Esq., Chanaral, Chili; and in England from Messrs. DRIVER, the Auctioneers, Whitehall, London; or of

S. T. G. DOWNING, Solicitor, Redruth, Cornwall.

ISLE OF MAN.

BRADDA MINING COMPANY.

IN LIQUIDATION.

TO BE SOLD, by auction, by Mr. RABY, in St. James's Hall, Douglas, upon Thursday, the 25th May inst., the UNEXPIRED TERM of the LEASE of the BRADDA MINE, in the parish of RUSHEN, held for a term of 21 years from 18·4, at a royalty of 1 12th for lead and 1-18th for copper, with the WHOLE of the PLANT and MACHINERY.

The machinery consists of a 45in. cylinder PUMPING ENGINE, 24 in. cylinder horizontal DRIVING ENGINE, 24 in. ROTARY ENGINE for dressing and pumping, TWO 10 ton BOILERS, ONE 11 ton BOILER, crushing mill, and every article suitable for a mine in working order.

There are two shafts, which render the property capable of being worked as two separate mines, from each of which considerable quantities of ore have been raised and sold. The workings in both are now standing in ore, and highly remunerative results may be confidently looked for by an expenditure of sufficient capital.

The mine was thoroughly inspected in October, 1871, by Capt. R. W. Rickard, of Cheddar, in Somerset, at the instance of the company, and his report upon the mine, and the best method of carrying on the work, concludes with the following words:—

"In conclusion, I do not hesitate to affirm that there are few speculations in mining that promise so favourably to become a great success as the Bradda Mine; and it only requires a little patience on the part of the shareholders, and perseverance in carrying out the best plan of developing the mine, to reach, before very long, the fruitful period of its history."

Auction to take place at 12 o'clock noon, when particulars will be declared, and all information may be obtained upon application to Capt. R. BARKELL, Port Erin; or to JAMES SPITTALL, Advocate, Douglas.

THE MINARIA SPANOLA
(SPANISH MINING COMPANY).

THE ABOVE COMPANY WILL SELL, BY AUCTION, at their office, Paseo de la Castellana, Madrid, at Two o'clock P.M., on the 31st of May next, ALL MINERALS PRODUCED OF ORE that they will commence the 1st July next until the 31st December, 1877, to draw from their Mines of the HORCAJO, situated in the province of CUIDAD REAL.

The analysis of the ore gives an average of 68 per cent. of lead and about 352 grammes of silver per 100 kilogrammes.

All particulars and prospectus will be obtained on application to the Manager,
CEFIRINO AVECILLA,
22, Paseo de la Castellana Hotel, 4, Madrid.

PENHALE MINE, CORNWALL.

TO BE SOLD, BY PRIVATE CONTRACT, a 66 in. cylinder PUMPING ENGINE, with TWO large BOILERS, now on the above mine.

To treat for the same, apply to FREDERICK WARWICK, Esq., 25, Bucklersbury, London, the Official Liquidator; Messrs. MILLER and SMITH, solicitors, 3, Salter's Hall-court, Cannon-street, London; or to Messrs. HANCOCK and SONS, auctioneers, St. Austell, Cornwall.—Dated St. Austell, May 10, 1876.

TO BE SOLD, for £2600 in cash, and £3400 in shares (fully paid up), in a company to be formed by the purchasers, a VALUABLE SLATE QUARRY, situated in the same vein as that of the Welsh Slate Company's Quarry (better known as Lord Palmerston's), and only a short distance therefrom, yielding slates in every respect equal to those famous quarries.

Cash payment may (if desired) be paid by instalments extending over a long term.

For detailed particulars, apply to "T. R.," Post Office, Bangor.

TYRONE COAL FIELD.

TO BE SOLD, BY PRIVATE TREATY, as a going concern, all the COLLIERIES, with the ENGINES, PLANT, &c., belonging to the TYRONE COAL MINING COMPANY (LIMITED), near DUNGANNON, IRELAND.

The leases cover an area of about 3320 acres, and comprise the principal part of the Tyrone Coal District. The present yield of coal is from 300 to 350 tons weekly, but the deep pit at Curran is sunk to within 60 to 70 yards of the Main or Five-foot seam of coal, and when this is opened out the quantity available will be enormous.

Professor HULL in his report on these collieries, estimated the available quantity of coal in the company's grants at 3,600,000 tons.

These collieries are situated in the centre of an extensive manufacturing district. The Dungannon and Cookstown Railway, about to be made, will pass through them. The Dungannon Station of the Great Northern Railway of Ireland is within 1½ mile of the works, and the Ulster Canal at Coalisland is about the same distance, thus giving rail and water communication with the entire markets of the North and West of Ireland for the coal.

The capital required for the completion of the deep colliery is very small indeed, and a rare opportunity is offered to coalmasters and capitalists to obtain a colliery, circumstanced locally, where prices can be obtained for the coal fully 50 per cent. above those realised on English and Scotch collieries, arising from its inland position and freedom from the usual competition of other large coal fields.

Application to treat, and for viewing the works, may be made to the undersigned,

SILAS EVANS, Liquidator.

Dated 9, Victoria Chambers, Belfast, 29th April, 1876.

TO CAPITALISTS.

TO BE DISPOSED OF, A VALUABLE SLATE QUARRY, known as the

CLONEY BRIEN SLATE QUARRY,

Near KILLALOE, IRELAND, now in full working order, producing a large quantity of slates of the most superior descriptions and of excellent quality, and highly approved of by the public. The proprietor has expended a large sum of money in opening and clearing the quarry, and putting it in good working order, and by a judicious outlay of capital will be one of the best and most profitable quarries in the country. The supply may be said to be exhaustless, and easy of access.

The sett consists of 419 acres statute; the term 99 years; and the royalty 1-15th, or a dead rent of £40 in the event of the royalty not producing that amount.

The past years the demand for slates has considerably exceeded the supply. Orders are still in unexecuted, and there is every probability of a yearly increasing demand, equal to the prosperity of the country.

It is a well known fact that there are few greater sources of wealth than slate quarries when judiciously and economically managed, and the facility afforded, both by rail and water carriage at Killaloe to all parts of Ireland, and the shipping port of Limerick, ensures a large and constant demand.

Also, TO BE LET, in the immediate neighbourhood, TWO other QUARRIES, known as the

LOUGHTEA AND TOWNLOUGH SLATE QUARRIES,

Which have been extensively worked (and were only abandoned owing to the death of the late proprietor), with the right of quarrying over 154 acres, and a right of way to the shore of Lough Derg, where slates can be shipped to all parts of Ireland. The rents of these are £70 and £15 respectively, or the alternative of a royalty of 1-15th.

There is an excellent two storied slated house recently erected, suitable for a resident manager, and enclosed yards and offices connected with the quarries.

Leases will be granted to an eligible tenant for 99 years.

These establishments combined could be made a very large concern, surpassing many of the quarries in Wales.

For further particulars, apply to—

WILLIAM HEADECH, Esq., Johnstown Park, Nenagh, Ireland.

SILVER MINE FOR SALE.

THE PROPRIETORS having PROVED the EXISTENCE of a LODE carrying SILVER, one sample assaying 3000 ozs., and a parcel sold in bulk at the rate af £134 per ton, they wish for PARTIES TO JOIN either in the WORKING or PURCHASE of WHOLE or PART, that sufficient machinery may be erected to command all the lodes of rich Copper, Silver-Lead, and Tin. £4000 considered ample, but £500 would work the silver branch with immediate returns. The bulk of the purchase money could be met from the returns of ore and paid up shares.

Apply by letter to "S. B.," 8, Frankfort-street, Plymouth.

COLLIERY FOR SALE.

TO BE SOLD, BY PRIVATE CONTRACT, a VALUABLE and EXTENSIVE COLLIERY in SOUTH STAFFORDSHIRE, situate in the centre of that manufacturing district, and having railway and canal communication with all the principal markets.

The estate contains several acres of the Ten Yard Coal, and the underlying measures in the solid; also Brooch (ribs and pillars), Heathen Coal, Gubbins, and White Ironstones, Fire-clay, and valuable beds of clay and marl suitable for making red and blue bricks.

Two beds of ironstone, fire-clay, and coal are as yet untouched.

The property is freehold and long leasehold, and the greater portion of the purchase money may be paid by instalments.

Only principals will be treated with.

For particulars and to treat, apply to H. and J. E. UNDERHILL, 21, Darlington-street, Wolverhampton.

TO CAPITALISTS OR PROMOTERS DESIRING TO MAKE MONEY.

TO BE SOLD, a COLLIERY ROYALTY in NORTH WALES, close to rail or shipping port; several shafts partially sunk; coal fully proved of FOUR SEAMS of good HOUSE and STEAM COALS, in an area of upwards of 400 acres of surface. It adjoins the West Mostyn Coal Field, just successfully launched, where under seams (including Cannel) have been proved in addition to the above; so that eminent engineers state that the available coal in this royalty may be 88 feet thick.

Present holder will arrange to sell the entire to an individual or company for what it has cost him, dividing all profit made above, which, even in a normal state of the coal trade, must be large. Certain and safe surveys by eminent Staffordshire and Welsh engineers have already been made.

Address, "Nil Desperandum," care of Mr. Watson, 15, Fenwick-street, Liverpool

FOR SALE, OR TO RENT, the COAL MINES or COLLIERIES situated in TURRUNCAN and PREJANO (Province of LOGRONO, SPAIN), about 28 kilometres by rail between Bilbao and Tudela.

The coal according to the report of the engineer, Mr. Chevalier, is suitable for producing gas; these mines also produce a quality which appears equal to English Cannel Coal.

The works of exploration already completed show that coal in considerable quantities exists in these mines.

For further particulars and details, as well as for terms of sale or rental, address Don PEDRO RIBED, Pamplona, Spain.

SULPHATE OF BARYTES FOR SALE.—Fine powdered, beautifully white; also in the Rock or Crude State, free from Lime and Metallic Oxide.

Samples on application to—

RUTHWAITE BARYTES MINING COMPANY,
Nov. 17, 1875. WHITEHAVEN.

FOR SALE:—

A 40 in. CORNISH BEAM PUMPING ENGINE, 9 ft. stroke in cylinder, and 7 ft. in shaft (by Perran Foundry Company), in good condition.

THREE 30 ft. by 6 ft. 6 in. SINGLE-FLUED BOILERS, with all fittings complete—one of the above nearly new.

ONE 12 in. cylinder HORIZONTAL STEAM CAPSTAN, with drawing gear and drum complete, is equal to new.

Price for the lot as they stand, £480.

Apply—

JAMES PAYNE, WREXHAM.

FOR SALE, a 35-horse power PORTABLE STEAM ENGINE, with link motion reversing gear, ready for delivery.

An 18-horse power VERTICAL STEAM ENGINE, with link motion reversing gear, also gear to wind and pump.

A 9-ft. PAN MORTAR MILL, VERTICAL ENGINE, and BOILER.

Apply to—

BARROWS AND STEWART, ENGINEERS, BANBURY.

FOR SALE.

THE UNDERMENTIONED STOCK OF SUPERIOR SECOND-HAND STEAM ENGINES, &c.:—

ONE 50 in. cylinder CORNISH PUMPING ENGINE, 10 ft. stroke in cylinder with or without TWO BOILERS of 10 tons each.

ONE 40 in. cylinder CORNISH PUMPING ENGINE, 10 ft. stroke.

ONE 36 in. cylinder CORNISH PUMPING ENGINE, 8 ft. stroke.

ONE 28 in. cylinder ROTARY ENGINE, 8 ft. stroke, with TWO FLY WHEELS.

ONE 24 in. cylinder ROTARY ENGINE, 8 ft. stroke, with FLY WHEEL of 6 tons, and winding drum.

ONE 22 in. cylinder ROTARY ENGINE, 6 ft. stroke, with PUMPING GEAR attached.

ONE 24 in. HORIZONTAL CONDENSING ENGINE, 6 ft. stroke, geared for pumping and winding, and BOILER 9 tons.

ONE 10 in. HORIZONTAL CONDENSING ENGINE, geared for pumping and winding, and BOILER 5 tons.

ONE 12-horse power PORTABLE ENGINE, with pumping gear, FOR SALE OR HIRE.

Also a LARGE STOCK OF PUMP-WORK, from 6 to 20 inches in diameter, ENGINE BOILERS, STRAPPING PLATES, BALANCE BOBS, CHAINS, WINCHES, STAMPS AXLES, and other articles in general use in Mines, Collieries, &c.

The above will be found in good condition, and well worthy the attention of purchasers. Apply to—

F. W. MICHELL AND CO.,
EAST CARN BREA, REDRUTH, CORNWALL.

In the "Colliery Managers' Pocket Book," page 145, it is clearly shown that the cost of working the Cornish Engine is considerably less than one-half of the cost of working any other engine.

THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Total divs.	Per share.	Last paid
1500	Alderley Edge, c, Cheshire*	10 0 0	—		12 11 8	0 5 0	Jan. 1876
1000	Balmynheer, t, Wendron (4000 to is.)	1 0 0	—		0 2 0	0 2 0	Nov. 1875
50000	Bampfylde, c, i, mn., Devon*	1 0 0	1⅝	1 1⅛	0 2 0	0 2 0	June 1873
300	Botallack, t, c, St. Just§	116 5 0	27½	25 30	619 15 0	5 0 0	Aug. 1872
4000	Brookwood, c, Buckfastleigh	1 16 0	1¼	1 1¼	3 16 0	0 2 0	Nov. 1875
3348	Cargoll, s-l, Newlyn§	6 2 0	¾	½ ¾	4 16 3	0 12 6	Oct. 1872
6400	Cashwell, l, Cumberland*	2 10 0	—		1 7 6	0 2 0	Aug. 1875
1000	Carn Brea, c, t, Illogan†	35 0 0	30	30 32½	398 0 0	1 0 0	Feb. 1874
6000	Cath. & Jane, l.* Penrhyndendraeth	5 0 0	—		0 7 6	0 7 6	June 1873
2450	Cook's Kitchen, t, Illogan†§	22 9 9	3	2½ 3	11 17 0	0 7 6	Jan. 1873
10240	Devon Gt. Consols, c, Tavistock†* §	1 0 0	4	3 3½	116 10 0	0 12 0	May 1872
4296	Dolcoath, c, t, Camborne	10 14 10	35	34 36 xd	109 18 9	0 7 6	May 1876
5500	Drake Walls, t, c, Calstock	6 0 0	1¼	1 1¼	0 2 0	0 2 0	July 1874
15000	Duchess of Westminster,* l, Holywell	1 0 0	—		0 3 0	0 2 0	Feb. 1876
40000	East Balleswidden, t, Sancreed*	1 0 0	—		0 2 11	0 0 5	Feb. 1874
6144	East Caradon, c, St. Cleer†	2 14 6	1¾	1⅜ 1⅝	14 19 0	0 2 0	Oct. 1872
300	East Darren, l, Cardiganshire	32 0 0	27	25 27	233 10 0	1 0 0	Mar. 1876
6400	East Pool, t, c, Illogan	0 9 9	13½	12½ 13½xd.	14 12 3	0 2 6	May 1876
1906	East Wheal Lovell, t, Wendron*‡§	6 19 0	3		20 7 6	0 7 6	Oct. 1874
2800	Foxdale, l, Isle of Man*†	25 0 0	—		82 5 0	0 10 0	Feb. 1876
40000	Glasgow Cara., c* [30,000 £1 p., 10,000 15s. p.]		1⅛	1¼ 1⅛	0 11 10	0 2 0	Jan. 1876
15000	Great Dyliffe,* l, Montgomeryshire	4 0 0	5	4½ 5	0 2 6	0 2 6	Apr. 1876
15000	Great Laxey, l, Isle of Man*	4 0 0	18	17 18	19 13 0	0 10 0	Apr. 1876
15000	Great West Van, l, Cardigan*	2 0 0	⅝	½ ⅝	0 2 0	0 1 0	Aug. 1874
5908	Great Wheal Vor, t, c, Helston†§	41 2 6	1¾	1¼ 1½	15 19 6	0 2 6	June 1872
6400	Green Hurth, l, Durham*	0 6 0	4	3½ 4	1 12 0	0 4 0	Oct. 1874
20000	Grogwinion, l, Cardigan*	2 0 0	7	5½ 6½	0 5 6	0 2 6	Jan. 1876
9830	Gunnislake (Clitters'), t, c	5 5 0	3¼	3 3¼	0 10 9	0 2 0	Mar. 1876
1024	Herodsfoot, l, near Liskeard†	8 10 0	3¼	3 3¼	62 5 0	0 15 0	Oct. 1872
18000	Hingston Down, c, Calstock*† (£1 sh.)	2 5 0	1	¾ 1	4 4 0	0 1 0	Nov. 1875
25000	Killaloe, sl, Tipperary	1 0 0	—		0 3 11½	0 0 5	Mar. 1873
400	Lisburne, l, Cardiganshire	18 15 0	60	55 60	572 10 0	1 0 0	Mar. 1876
5120	Lovell, t, Wendron	0 10 0	—		0 17 6	0 1 6	Jan. 1874
9000	Marke Valley, c, Caradon*	5 0 6	2⅜	1⅞ 2⅛	7 15 0	0 2 0	Jan. 1876
11000	Melindur Valley, l, Cardigan*	3 0 0	3		0 7 2	0 3 7	Jan. 1875
9000	Minera Mining Co., l, Wrexham*	5 0 0	13	12 12½ xd	64 15 2	0 5 0	May 1876
20000	Mining Co. of Ireland, cl, c, l*	7 0 0	—		23 11 6	0 3 6	Jan. 1876
512	North Busy, c, Chacewater	3 9 6	4	3 3½	0 10 0	0 10 0	Dec. 1875
12000	North Hendre, l, Wales	2 10 0	—		1 2 6	0 2 6	Nov. 1875
2000	North Levant, t, c, St. Just§	12 2 0	—		4 13 0	0 12 0	Sept. 1873
21855	Old Treburgett,* s-l, ordinary shares	1 0 0	—		0 0 9	0 0 9	Feb. 1874
9258	Old Treburgett,* s-l (10 per ct. pref.)	0 10 0	½	⅜ ½	0 1 4⅛	0 0 6	July 1874
5000	Penhalls, t, St. Agnes	3 0 0	2	1½ 2	3 13 6	0 2 0	July 1875
45793	Penstruthal, t, c, Gwennap	2 0 0	½	⅜ ½	0 2 8	0 0 8	Nov. 1875
6000	Phœnix, t, c, Linkinhorne§	4 13 4	—		39 19 10	0 4 0	Nov. 1872
18000	Prince Patrick,* s-l, Holywell	1 0 0	2¼	2 2¼	0 14 0	0 1 3	Jan. 1876
1120	Providence, t, Lelant†§	17 16 7	3	2½ 3	104 12 6	0 10 0	Sept. 1872
12000	Roman Gravels, l, Salop*	7 10 0	15½	15 15½	5 16 0	0 8 6	Feb. 1876
512	South Caradon, c, St. Cleer	1 5 0	—		726 0 0	2 0 0	Feb. 1876
6123	South Condurrow, t, c, Camborne‡	6 5 6	4	3½ 4	1 15 0	0 2 6	Feb. 1876
10000	So. Pr. Patrick,* s-l.(8000 sh. issued)	1 0 0	—		0 7 0	0 1 0	Oct. 1875
12000	Tankerville, l, Salop*	6 0 0	11¼	10¾ 11¼	4 7 0	0 5 0	May 1876
6000	Tincroft, c, t, Pool, Illogan†	9 0 0	18	17½ 18½	49 3 6	0 5 0	Mar. 1876
15000	Van, l, Llanidloes*	4 5 0	40	38 40	17 9 6	0 16 0	Mar. 1876
3000	W. Chiverton, l, Perranzabuloe†	12 10 0	17½	16½ 17½	54 0 0	0 10 0	Apr. 1876
1783	West Poldice, St. Day	10 0 0	—		1 14 0	0 4 0	Feb. 1876
512	West Tolgus, c, Redruth	95 10 0	64	61 63	13 10 0	1 5 0	Apr. 1876
2048	West Wheal Frances, t, Illogan	27 3 9	8	7 7½	3 12 6	0 5 0	Oct. 1872
512	Wheal Basset, c, Illogan†§	11 2 6	7	7 8	638 10 0	1 10 0	Aug. 1872
2048	Wheal Jane, t, Kea	2 13 10	1¼	1 1¼	8 5 0	0 5 0	July 1875
4295	Wheal Kitty, t, St. Agnes	5 4 6	2½	2 2½	11 19 6	0 2 6	Dec. 1874
80	Wheal Owles, t, St. Just§	86 5 0	145	140 145	522 10 0	4 0 0	Aug. 1872
6000	Wheal Prussia, t, Redruth	2 0 0	—		0 3 0	0 2 0	Dec. 1875
25000	Wicklow, c, sul, i, Wicklow	2 10 0	—		52 9 0	0 2 6	Mar. 1872
10000	Wye Valley, l, Montgomery*	3 0 0	8	6½ 7½	0 6 0	0 3 0	Aug. 1875

FOREIGN DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Total divs.	Per share.	Last paid
35500	Alamillos, l, Spain*†	2 0 0	2½	2 2½	1 12 3	0 2 6	Mar. 1876
30000	Almada and Tirito Consol., s*†	1 0 0	½	¼ ½	0 6 3	0 1 0	May 1876
20000	Australian, c, South Australia†	7 7 6	2	1½ 2	0 15 6	0 2 0	July 1875
10000	Battle Mountain,* c, (6240 part pd.)	5 0 0	1	¾ 1	0 10 0	0 10 0	Nov. 1872
15000	Birdseye Creek, g, California*	4 0 0	1⅞	1¾ 1⅞	0 14 0	0 2 6	June 1874
6000	Bensberg, l, Germany*	10 0 0	2	1½ 2	0 17 4	0 8 0	July 1873
12320	Burra Burra,* c, So. Australia	5 0 0	—		70 0 0	0 10 0	Oct. 1872
20000	Cape Copper Mining,*† So. Africa	7 0 0	40	38 40	23 15 0	1 0 0	Mar. 1876
40000	Cedar Creek, g, California*	5 0 0	⅞	½ ¾	0 5 0	0 2 6	June 1873
30000	Central American Association*†	0 16 6	—		0 6 0	0 1 0	July 1869
15000	Chicago, s, Utah*	10 0 0	6	6 6¼	1 16 0	0 4 0	Feb. 1876
21000	Colorado Terrible, s-l, Colorado*†	5 0 0	1¾	1 1½	0 13 6	0 4 0	Jan. 1875
10000	Copiapo, c, Chili* (£10 shares)	16 15 0	—		7 8 5	0 2 6	Jan. 1876
60000	Don Pedro North del Rey*†	0 16 0	⅜	⅛ ⅜	2 5 9	0 2 0	Mar. 1872
23500	Eberhardt and Aurora, s, Nevada*†	10 0 0	7¾	7¾ 8	1 0 0	1 0 0	July 1871
50000	Emma,* g, s, Utah	20 0 0	1½	1⅛ 1⅜	3 12 0	0 6 0	Dec. 1872
70000	English and Australian, c† S. Aust.	2 10 0	1⅞	1⅝ 1⅞	2 18 9	0 2 0	Mar. 1876
15000	Ferguson, g, California*	2 0 0	—		0 3 0	0 3 0	April 1872
30000	Flagstaff, s, Utah*	10 0 0	1¾	1½ 1¾	4 2 0	0 5 0	July 1873
25000	Fortuna, l, Spain*†	2 0 0	5¾	5¼ 5¾	5 8 10	0 8 0	Mar. 1876
30000	Gold Run, hyd.	1 0 0	¾	½ ¾	0 2 4	0 0 4	Oct. 1872
68000	Kapunda Mining Co. Australia†	1 3 0	—		0 2 4	0 0 6	June 1873
20000	Last Chance, s,* Utah	5 0 0	⅞	½ ¾	0 14 0	0 2 0	July 1873
15000	Linares, l, Spain*†	3 0 0	5¾	5¼ 5¾	15 14 2	0 10 0	Mar. 1876
65000	London and California, g*†	2 0 0	⅜	⅛ ⅜	0 1 0	0 1 0	July 1875
7837	Lusitanian, Portugal*† (£5 shares)	3 10 0	1½	1 1⅛	1 11 6	0 1 6	Mar. 1873
5000	Mammoth Copperopolis of Utah, c, s	10 0 0	—		0 5 0	0 5 0	Dec. 1872
5000	Mountain Chief, s, Utah*	10 0 0	—		0 4 0	0 4 0	Jan. 1873
18000	Prussian Mining & Ironworks, cl, i	30 0 0	—		6 0 0	3 0 0	July 1873
10000	Pontgibaud, s-l, France†	20 0 0	19	17 19	20 14 2	1 3 2	Nov. 1875
100000	Port Phillip, g, Clunes*†	1 0 0	⅞	¼ ½	1 8 0	0 1 0	Jan. 1872
54000	Richmond Consols, s, Nevada*†	5 0 0	7¾	7 7¼	2 14 0	0 7 6	May 1875
40000	Santa Barbara,* g, Brazil	0 10 0	1⅞	1½ 1¾	0 1 3	0 1 3	Apr. 1876
120000	Scottish Australian Mining Co.*†	1 0 0	1¾	1½ 1¾	15 per cent.		May 1876
80000	Scottish Austral. Mining Co., New	0 5 0	⅝	⅜ ⅝	15 per cent.		May 1876
112500	Sierra Buttes, g, California*†	2 0 0	1¼	1 1⅛	1 14 0	0 2 0	Apr. 1876
60000	South Aurora, s, Nevada*	5 0 0	⅛	⅛ ½	0 14 2	0 2 0	Nov. 1873
£253000	St. John del Rey*† (£5 stock and multiples dealt in)			360 380	½ year...25 p. ct. for Dec. 1875		
15000	Sweetland Creek, g, California*†	4 0 0	2¼	1⅝ 1⅞	3 6 0	0 2 0	Mar. 1876
20000	Tolima, g, s* (6000 sh. are £5 f. pd.)	4 10 0	3¾	3 3¼	0 11 6	0 6 6	May 1874
16000	Western Andes, s,* New Granada	5 0 0	5½	5 5½	2 13 0	0 8 0	Sept. 1875

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Last Call.
20000	Anglo-Australian, g, Victoria*	2 10 0	—		Sept. 1872
5000	Anguilla Phosphate, West Indies (4000 issued)	10 0 0	—		Fully pd.
12000	Argentine, g, Argentine Republic	5 0 0	6¾	6 6½	Fully pd.
10000	Australian Central, g* (also 6000 deferred shares)	1 0 0	—		Fully pd.
3000	Bellavista, s, Peru* (£10 shares)	10 0 0	—		Fully pd.
30000	Blue Tent, hyd., California	5 0 0	—	3 3¼	Fully pd.
50000	Braganza, g, Brazil*†	0 15 0	—		Oct. 1870
12000	Camp Floyd, s, Utah*	10 0 0	—		Fully pd.
35000	Cesena Sulphur Company, Romanga, Italy*	10 0 0	—		Fully pd.
50152	Chontales, g, s, Nicaragua*† (and 12,542 of £1 15s.)	2 0 0	½	¼ ⅜	Fully pd.
6000	Clifton, s, Colorado*	5 0 0	—		Feb. 1872
16000	Condes of Chili, s-l	5 0 0	6¼	5 5½	Fully pd.
10000	Crescent, g, Plumas County, California*	10 0 0	—		Fully pd.
85000	Excelsior Hydraulic Gold Washing Co., California*	6 0 0	—		Dec. 1871
100000	Exchequer, g, s, California*†	1 0 0	2⅜	1⅞ 2⅛	Fully pd.
55000	Frontino and Bolivia, g, New Granada*†	2 0 0	2	1⅞ 2⅛	Fully pd.
40000	Holcombe Valley, g,* California	1 0 0	—		July 1873
6000	Hornachos,* s-l, (£10 shares) Spain	10 0 0	15	14½ 15½	Jan. 1874
20000	Imperial Brazilian Collieries, Brazil*	5 0 0	—		Fully pd.
100000	I. X. L., g, s, California*	1 0 0	1⅛	1 1¼	Fully pd.
50000	Javali, g, Nicaragua*	2 0 0	½	¼ ½	Fully pd.
12000	Lanestosa,* l, z, Viscaya, Spain (£2 shares)	1 15 0	—		Mar. 1876
75000	Malabar, g, Colombia* (65000 issued)	1 0 0	—		Fully pd.
40000	Malpaso, g, Colombia* (10000 pref. shares, fully paid)	1 0 0	—		Fully pd.
12000	Menzenberg, c, Honnef, Germany*	5 5 0	—		Fully pd
6000	Monte Loreto, g, c, Italy*	5 0 0	—		Fully pd.
66000	New Quebrada, c, Venezuela*	5 0 0	3¾	3⅜ 3⅝	Fully pd.
50000	New Rosario, s, Mexico*	1 0 0	—		Fully pd.
20000	New Zealand Kapanga, g, Coromandel*	5 0 0	¾	½ ¾	Fully pd.
3000	Oregon,* g, Oregon, U.S. (preference shares)	4 0 0	4¼	4 4¼	Sept. 1875
50000	Panulcillo, c, Chili*† (£80000 debentures)	4 0 0	2	1¾ 2¼	Fully pd.
80000	Pestarena United, g, Italy*†	3 0 0	⅜	⅛ ⅜	Fully pd.
50000	Rica, g, Colombia* (40000 issued)	1 0 0	—		Fully pd.
£2,1[illegible]1,000	Rio Tinto,* c, Huelva, Spain	Stock	56	56 58	Fully pd.
1[illegible]000	Rossa Grande, g, Brazil*† (£1 shares)	0 19 0	⅜	½	July 1872
30000	Russia Copper, Orenburg and Ufa*†	10 0 0	3	2¾ 3¼	Fully pd.
25000	San Pedro, c, Chili*	2 0 0	2⅜	1¾ 2	Fully pd.
10000	Silver Plume, s, Colorado*	1 0 0	—		Fully pd.
87500	Snowdrift, s, Colorado*	2 0 0	—		Fully pd.
30000	Tecoma, s, Utah*	10 0 0	⅜	½ ¾	Fully pd.
20000	Thornhill Reef, g, Australia*	1 0 0	¾	⅛ ¾	Fully pd.
43174	United Mexican, s, Mexico*†‡	28 15 3	2⅛	2 2⅛	May 1875
14000	Utah, g, s-l, Utah*	5 0 0	—		Fully pd.
25000	Victoria (London)*, g, Australia (25,000 sh. 16s. pd.)	1 0 0	—		Fully pd.
75000	Yorke Peninsula, c, South Australia	1 0 0	½	¼ ½	Fully pd.
40000	Yorke Peninsula, c, South Australia Preference	1 0 0	1¼	¾ 1¼	Fully pd.

§ Have made calls since last dividend was paid.

FOREIGN AND MISCELLANEOUS STOCKS, BONDS, LOANS, AND TRUSTS.

	Closing Prices.	
Argentine, 1868, 6 per cent	70	72
Bolivia, 6 per cent	18	20
Brazilian, 1865, 5 per cent.	94	96
Chilian, 1866, 7 per cent.	101	104
City of Providence, 5 p.c. coupon bonds	92	94
Egyptian, 1862, 7 per cent.	45	48
Do., 1868, 7 per cent.	46	47
Do., 7 per cent., V.M.L.	47	52
Do., 9 per cent. guar.	51	[illegible]9
Do., 7 per cent., K.M.L.	44	46

	Closing Prices.	
Foreign and Col. Gov. Trust, 6 p. cent.	75	85
Do., 5 per cent., 2d issue	60	70
Do., 6 per cent., 3d issue	67	77
Do., 1872, 4th issue	67	77
Do., 1873, 5th issue	57	67
Peruvian, 1870, 6 per cent.	21	2[illegible]
Do. 1872, 5 per cent.	15	16
Russian, 5½ per cent. L. Mort.	89	93
Spanish, Quicksilver Mort., 5 p. cent.	87	90
United States Mort., 6 per cent.	97½	98½

NON-DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.
40000	Aberdaunant, l, Llanidloes*	1 0 0	1⅝	1⅜ 1⅝
10000	Aberystwith,* s-l, Cardigan	5 0 0	—	
7000	Alviggan & Burngullow,* t, St. Austell	2 0 0	—	1⅛ 1⅝
18000	Ambrose Lake, t, c, Liskeard	1 18 6	—	
12000	Assheton, l, Carnarvonshire*	5 0 0	1¾	1½ 1¾
50000	Ballycummisk,* c, Schull	2 0 0	—	
12000	Bedford United, c, Tavistock	1 17 6	1⅛	1 1⅛
18000	Belstone,* c, Devon (27,000 fully pd.)	1 0 0	3	2¾ 3
15000	Blaen United,* s-l, Cardigan	1 0 0	1⅛	⅞ 1⅛
15000	Blue Hills, t, c, St. Agnes	2 9 0	—	
2000	Bowden Hill,* mn	1 0 0	—	
20000	Brynambor, l, Cardigan	1 0 0	—	
4893	Bwadrain, s-l, Cardigan*	4 0 0	—	
4127	Bwlch Consols, s-l, Cardigan*‡	5 0 0	—	
30000	Caldbeck Fells, l, Cumberland*	2 0 0	—	
5584	Carn Camborne, c, t, Camborne	5 3 6	¼	⅛ ¼
10000	Cathedral, t, c, Gwennap*	1 10 0	1⅝	1½ 1⅝
20000	Central Foxdale, l, Isle of Man*(£2 sh.)	1 0 0	—	
10000	Central Van,* l, bl, Llanidloes	5 0 0	—	
20000	Cwm Dwyfor,* c, s-l, Carnarvonshire	1 0 0	—	
15000	Cwm Nant Ddu,* l, Montgomery	1 0 0	—	
3000	Cwmystwith (New) [5l. shares]	4 0 0	—	
10000	Denbighshire Consolidated, l*	3 0 0	3	2 3
656	Ding Dong, t, Gulval	50 14 6	4¼	4 4¼
10000	Dubby Syke, l, Durham*	0 9 0	½	⅜ ½
10000	Duchy Great Consols, c, Calstock	5 0 0	—	
512	East Basset, c, Redruth†‡	77 7 6	2⅛	2 2⅛
800	East Black Craig,* l., Scotland	25 0 0	—	
4000	East Chiverton, l, Perranzabuloe	6 12 0	2¼	1¾ 2¼
6000	East Grenville, c, Camborne	7 8 6	—	
30000	E. Nant-y-mwyn,* l, Brecknockshire.	1 0 0	⅜	¼ ⅜
6000	East Tywarnhaile, c, St. Agnes	0 10 0	3⅝	3½ 3⅝
15000	East Van, l, Llanidloes*	5 0 0	9¼	10 10¼
20000	Elgar,* s-l, Cardiganshire	1 0 0	1¼	1 1¼
12800	Florence and Tonkin United* t	0 10 0	—	
5000	Frank Mills, l, Christow	5 6 0	⅝	½ ⅝
8000	Fronvellan, l, Mont.* [4000 sh. fy. pd.]	1 0 0	—	
3950	Gawton, c, Tavistock	4 1 6	⅝	⅜ ⅝
12000	Glan Clwyd,* l, Gwyddelwern	1 0 0	⅞	¾ ⅞
10000	Glan Severn, s-l, Flintshire	1 0 0	—	
10000	Glyn,* l, Llanidloes	2 0 0	4½	3½ 3¾
15000	Gobbett, t, Dartmoor	1 0 0	—	
12000	Goginan, and Level Newydd, Card., l	2 10 0	—	
100000	Gold, g, Merionethshire	1 0 0	—	
20000	Goreu,* s-l, Carmarthen*	1 0 0	—	
7500	Gorsedd and Merllyn Cons., , Flint	2 10 0	3	2½ 3
20000	Gt. East Foxdale, l, I. of Man (1l. sh.)	0 15 0	—	
9500	Great Pant-y-Pydew, l, Holywell	2 0 0	—	
18000	Grosvenor, l, Holywell (£1 sh.)	0 7 0	—	
10000	Harehope Gill,* l, Durham (£1 sh.)	0 3 6	1	1
6400	Harwood,* l, Durham	0 15 0	1	⅞ 1
6000	Keswick United, l*	5 0 0	—	
6000	Killifreth, t, Chacewater	1 5 0	1	⅞ 1
25000	Kingston Consols, s-l, Cornwall	1 0 0	1	⅞ 1
12000	Ladywell,* l, Salop	2 10 0	1⅜	1¼ 1½
2500	Levant, c, t, St. Just	9 6 6	—	
64	Llandilo, s-l, bl, Flintshire	50 0 0	—	
14000	Llanidloes, l, Montgomery*	3 0 0	3¼	3 3½
15000	Llanlivery Cons., t, c, ars, Llanlivery.	1 0 0	1¼	1¼
25000	Llanrhaiadr, l, Montgomery*(£2 sh.)	1 10 0	—	
30000	Llanrwst, l, Carnarvon	2 0 0	3⅛	2⅞ 3⅛
15000	Llwyn Teify,* s-l, Cardigan	1 0 0	1⅛	1 1⅛
6000	Medlyn Moor, t, Wendron	1 4 10	1⅝	1½ 1⅝
10000	Mellanear Copper, Hayle*	2 0 0	—	
13000	Monydd Gorddu, l, Cardigan*	5 0 0	4	3½ 4
4000	Nanty, l, Montgomeryshire*	1 0 0	—	
25000	Nant-y-Ronen, s-l, Cardigan*	1 0 0	—	
12000	Neptune,* c, St. Agnes	0 5 0	—	
10000	New Belton, l, Northumberland*	1 0 0	—	
3000	New Chiverton,* l, Perranzabuloe	6 0 0	6¾	6¼ 6¾
20000	New Consols, c, Tavistock*	3 0 0	1	½ 1
8000	New Crickheath,* l, Shropshire	2 0 0	—	
8000	New Dolcoath, t, c, Camborne*	3 0 0	1⅛	1 1⅛
20000	New East Foxdale, s-l, Isle of Man	0 15 0	—	
16000	New Fowey Consols, t, St. Blazey*	3 0 0	2	1½ 2
2[illegible]00	New Hendra, t, Breage	2 9 0	1¼	1 1¼
10000	New North Pool,* c, Illogan	3 0 0	3	2 3
6400	New Pembroke, t, c, Par Station	5 4 6	⅜	⅛ ⅜
5000	New Rosewarne, c, Gwinear	5 12 0	¾	⅝ ¾
3200	New South Merllyn, l, Flint*	2 10 0	—	
4[illegible]00	North Cornwall, l, Cornwall (£5 sh.)	3 0 0	3¼	3 3¼
17000	North Laxey,* Isle of Man	2 0 0	1⅛	⅞ 1⅛
20000	North Prince Patrick,* l, Holywell	1 0 0	1¼	1 1¼
2000	North Wheal Towan, t, c, Illogan	1 19 6	—	
1000	North Rosewarne, c, Gwinear	6 12 6	—	
8000	North Treleigh Wood, t, Redruth*	1 0 0	1¼	1 1¼
5936	North Treskerby, c, St. Agnes	3 15 4	—	
6000	Old Talargoch, l, Flintshire*	2 0 0	—	
2500	Old Tincroft, c, t, Lelant*	4 0 0	4⅜	4⅛ 4⅜
16923	Parys Mountain,* c, Anglesea	3 0 0	¾	⅝ ¾
4000	Pateley Bridge, l, Yorkshire	5 0 0	4	3¼ 3¾
9530	Pedn-an-drea, t, Redruth§	9 17 0	—	
6000	Pennant, l, bar, North Wales*	5 0 0	6	5¼ 5¾
12000	Pennerley, l, Shropshire*	2 0 0	2⅛	1⅞ 2⅛
12000	Plynlimmon, l, Llanidloes*	2 5 0	⅝	½ ⅝
648	Polrose, t, Breage	21 0 0	—	
10000	Port Nigel,* s-l, Carnarvonshire	2 0 0	2	1½ 2
2000	Prideaux Wood, t, Llanivery	5 0 0	—	
12800	Prince of Wales, c, Calstock‡	1 7 6	¼	⅛ ¼
6000	Relistian Consols, c, Gwinear	0 10 0	¾	⅝ ¾
15000	Rookhope, l, Durham*	1 10 0	1⅛	1⅛ 1¼
5869	Rosewall Hill and Ransom, t	4 17 6	⅜	¼ ⅜
6000	Rosewarne United, c, t, Gwinear	1 10 0	—	
3000	Russell, s-l, Swymbridge	0 6 0	—	
5000	Silvercross,* c, t, Marazion	1 0 0	1⅛	1 1⅛
4200	Snowbrook, s-l, Montgomery	5 0 0	5	4½ 5
12000	South Bwadrain, s-l, Llanbadarnfawr	0 10 0	—	
5000	South Carn Brea, c, t, Illogan§	2 17 0	1⅜	1⅛ 1⅜
6000	South Cwmystwith, l, Cardiganshire.	0 10 0	2½	2 2½
6000	South Darren, l, Cardigan*	1 10 0	—	
512	South Dolcoath, c, t, Redruth	12 5 0	1⅛	1 1⅛
12000	South Lisburne, l, bl, Cardigan*	0 12 6	—	
18000	South Roman Gravels, l*	1 10 0	1½	1 1½
6000	South Roskear, t, c, Camborne	6 10 0	5	4 5
6000	South Tolcarne, t, c, Camborne	1 9 0	⅜	¼ ⅜
12000	South Van,* l, Montgomeryshire	1 0 0	—	
3000	South Ward, l, Beerferris	5 8 0	1⅛	⅞ 1⅛
937	South Wheal Crofty, c, Illogan	31 0 10	18	16 18
4500	South Wh. Frances, c, Illogan†	6 2 4	1⅝	1½ 1⅝
432	Spearn Moor, t, Penzance‡	46 17 9	—	
14000	St. Blazey t.* (£2 10s. shares)	2 0 0	—	
6000	St. Lawrence, Amal., l, Flintshire*	2 0 0	—	
10000	St. Patrick, l, Halkin, Holywell*	1 0 0	1⅜	1¼ 1⅜
6000	Success, &c., l, Derb. (12,000l. called)	1 0 0	—	
16000	Sunnyside,* l, Durham	2 0 0	3½	3 3½
30000	Talybont,* s-l, Talybont	1 0 0	1	⅞ 1
6400	Teesdale,* l, Durham	0 18 0	2	1⅞ 2
14000	Teign Valley, l, bar., Bridford	1 0 0	—	
10000	Temple, l, Cardigan*	1 0 0	2	2 2¼
12000	Trebeigh Consols, s-l, St. Ive	0 3 0	½	⅜ ½
5000	Treleigh Wood, t, Redruth	5 11 0	5	4 5
547	Trelyon Consols	15 0 0	⅜	¼ ⅜
12000	Trethellan, s-l, Crantock*	2 0 0	—	
4000	Trumpet Consols, t, Helston§	9 0 0	—	
5174	Unity Wood, t, c, Kenwyn	3 15 6	1¾	1½ 1¾
20000	Van Consols, l, Llanidloes*	2 10 0	2⅜	2 2¼
1000	Vaughan, s-l, Cardigan	10 0 0	—	
12000	West Assheton, l, Carnarvon	1 0 0	2⅛	2 2¼
6000	West Basset, c, Illogan†‡	5 6 8	5	4½ 5
20000	West Bryn Celyn,* l, Flintshire	1 0 0	—	
3000	West Craven Moor, l, Pateley Bridge*	10 0 0	11½	11 11½
12000	West Esgair Lle, l, Card.*	2 0 0	⅝	½ ⅝
5000	West Godolphin, t, c, Breage	1 13 6	1½	1¼ 1½
12000	West Goginan,* Cardiganshire	2 0 0	2⅜	2 2½
15000	West Great Work, t, Breage*	1 0 0	1	¾ 1
10000	West Llangynog, s-l, Montgomery	2 0 0	—	
12000	West Maria & Fortescue, t, c, Lamer.	4 12 6	⅜	¼ ⅜
3000	West Mary Ann, l, Menheniot	0 3 6	¼	⅛ ¼
50000	West Milwr, s-l, Flint	1 0 0	—	
12000	West Pant-y-Go, s-l, Flint*	1 0 0	—	
4000	West Pateley Bridge, l, Yorkshire	5 0 0	5½	5 5½
3000	West Phœnix, t, Linkinhorne	0 18 0	—	
1403	West Polbreen, t, St. Agnes	2 5 0	—	
10000	West Roskear, t, s-l, bl, c, Camborne	0 12 0	3	2¾ 3
12000	West Tankerville, l, Salop*	3 0 0	2⅛	2 2¼
6000	West Wheal Gorland, t, c	4 0 0	—	
3000	West Wheal Peevor, t, Redruth	0 10 0	—	
600	West Wheal Seton, c, Camborne†	40 0 0	30	27½ 30
12000	West Wye Valley, l, Montgomery	3 0 0	4½	4 4½
6000	Wheal Agar, c, Illogan	11 10 0	2¼	2 2¼
6000	Wheal Argus, t, Sancreed	0 10 0	—	
2500	Wheal Arthur, t, c, Calstock	1 0 0	—	
741	Wheal Basset and Grylls, t	9 18 6	—	
6000	Wheal Coates, t, St. Agnes	2 0 0	—	
6000	Wheal Crebor, c, Tavistock	4 1 0	2¼	2 2¼
8400	Wheal Emma, t, c, Buckfastleigh	1 10 0	—	
517[illegible]	Wheal Grenville, c, Camborne*	11 11 6	1	⅞ 1
1[illegible]00	Wh. Mary Hutchings,* t, Plympton.	1 14 0	—	
3000	Wheal Peevor, t, Redruth	6 1 0	2⅜	2¼ 2⅜
4096	Wheal Uny, t, c, Redruth	13 0 6	1½	1¼ 1½

IRON AND COAL COMPANIES.

Shares.	Company.	Paid.	Prices.	
£100	Abbot, John, and Co. [L.]	£75 0 0		
15	Albion Steel and Wire Co. [L.]	12 10 0	3¾	4¼
5	Alltami Colliery Co. [L.]	5 0 0	14¼	14
100	Ashbury Co. [L.]	90 0 0	par	¼
10	Bagnall, John, and Sons [L.]	10 0 0	32	30
10	Benhar Coal Co. [L.]	10 0 0	5	4
50	Bilbao Iron Ore Co. [L.]	50 0 0	par	½
10	Bilson & Crump Meadow Coll. Co. [L.]	10 0 0	5	4
4	Blaen Cwmbach Coal Co. [L.]	4 0 0	8	8½
50	Blaenavon Iron and Steel Co. [L.]	50 0 0	par.	1
100	Bolckow, Vaughan, and Co. [L.]...A	40 0 0		—
50	Bowling Iron Co. [L.]	50 0 0	10	12
50	Britannia Ironworks [L.]	25 0 0		—
50	Brown, Bailey, and Dixon [L.]	40 0 0		—
100	Brown, John, and Co. [L.]	70 0 0	22½	21½
5	Cakemore Colliery Co. [L.]	5 0 0	par	1
100	Cammell and Co. [L.]	80 0 0	par	¼
20	Cannock and Huntington Coal [L.]	2 0 0	8	7
10	Cardiff & Swansea St. Coal Co. [L.]	8 0 0		—
10	Cardigan Steel and Wire Co. [L.]	7 10 0	2¾	2¾
10	Central Swedish Iron and Steel [L.]	10 0 0	6¼	6
5	Chapel House Colliery	5 0 0	1	1
50	Charlton Iron Co. [L.]	40 0 0	2	1½
50	Chatterley Iron Co. [L.]	40 0 0	32	31
10	Chillington Iron Co. [L.]	10 0 0	21	20
1	Clee Hill Colliery Co. [L.]	1 0 0	6	6
10	Consett Iron Co. [L.]	7 10 0		—
1	Consett Spanish Ore [L.]	1 0 0	13	13½
50	Cooke, William, and Co. [L.]	30 0 0	25	24
20	Darlington Iron Co. [L.]	1 0 0	7	6
50	Davy Brothers [L.]	22 10 0	10¼	10¼
5	Diamond Fuel Co [L.]	4 10 0	¾	1¼
82	Ebbw Vale Co. [L.]	29 0 0	20	18
100	Fox, Samuel, and Co. [L.]	80 0 0	26	27
10	General Mining Ass. [L.] (£1 returned)	9 0 0	4	5
20	Great Western Coal Co. [L.]	17 0 0		—
2	Gwyngwillim Colliery Co. [L.]	2 0 0		—
15	Hopkins, Gilkes, and Co. [L.]	10 0 0	7¼	7
10	Ifton Rhyn Colliery Co. [L.]	10 0 0	9½	9
50	Knowles, Andrew, and Sons [L.]	17 0 0	2½	2¾
10	Llay Hall Coal, Iron, & Firebrick [L.]	10 0 0		—
5	Littledean Woodside Coll. Co. [L.]	5 0 0		—
50	Llynvi, Ogmore, & Tondu Co. [L.]	50 0 0	27	25
10	Lydney and Wigpool Iron Ore [L.]	7 5 0	9	8
10	Marbella Iron Ore Co. [L.]	10 0 0	7	6½
6	Mersey Steel and Iron Co. [L.]	5 0 0		—
10	Midland Iron Co. [L.]	5 0 0	2¾	3
5	Mold Argoed Colliery Co. [L.]	5 0 0		—
10	Monkland Iron and Coal Co. [L.]	10 0 0	8	7¾
4	Mwyndy Iron Ore [L.]	3 10 0	2	1½
100	Nant-y-Glo and Blaina (8 p.c. pref.)	100 0 0	30	35
1	Nerbudda Coal and Iron	0 8 0	par	½
20	New Sharlston Collieries [L.] Pref.	20 0 0	16	15
10	Newport Abercarn Coal Co. [L.]	8 0 0		—
10	Northmptn. Coal, Iron & Wagon [L.]	8 0 0		—
10	Northfield Iron Co. [L.]	8 0 0	2¾	2¾
1	Norton Green Coal Co. [L.]	1 0 0		—
35	Palmer's Shipbuilding and Iron [L.]	25 0 0	15	14¼
100	Parkgate Iron Co. [L.]	65 0 0	10¼	11¼
20	Patent Nut and Bolt Co. [L.]	14 0 0	6¾	7¼
20	Patent Shaft and Axletree [L.]	10 0 0		—
20	Pelsall Coal and Iron [L.]	15 0 0	4¼	4¼
50	Phœnix Bessemer Co. [L.]	40 0 0		—
50	Rhymney Iron Co. [L.]	50 0 0	22	24
100	Sandwell Park Colliery Co. [L.]	100 0 0		—
50	Ditto New	10 0 0		—
50	Shotts Iron Co. [L.]	50 0 0	10	11
100	Sheepbridge Iron and Coal [L.]	55 0 0	12¼	13
50	Silkstone & Dodworth Cl. & Iron [L.]	27 0 0	6	5
20	Skerne Ironworks [L.]	20 0 0	13½	13
50	Somorrostro Iron Co. [L.]	50 0 0		—
20	South Wales Coal Co. [L.]	17 0 0		—
100	Staveley Iron and Coal Co. [L.]	60 0 0	34	36
100	Ditto ditto New	10 0 0	6½	7
20	South Cleveland Ironworks [L.]	20 0 0		—
10	Swansea Valley Steam Coll. Co. [L.]	6 0 0		
100	Thames Iron Company	100 0 0		—
50	Tredegar Iron and Coal Co. [L.]	12 0 0	2	1
25	Ditto B. shares	25 0 0	2	1
20	Ulverston Mining Co. [L.]	12 0 0	1½	1
1	United Bituminous Collieries [L.]	1 0 0		—
10	Vancouver Coal [L.]	6 0 0	1½	2½
100	Vickers, Sons, & Co. [L.] 6 p. c. deb.	100 0 0	par	1
50	Welsh Ironworks Co. [L.]	50 0 0		—
25	W. Cumberland I. and Steel [L.]	20 0 0	9	7
10	West Mostyn Coal [L.] (12 p.c.pref.)	5 0 0		—
5	West Swansea Colliery Co. [L.]	5 0 0		—
10	Whitehaven Iron Co. [L.]	10 0 0		—
100	Wigan and Whiston Coal Co. [L.]	70 0 0		—
100	Wigan Coal and Iron Co. [L.]	75 0 0		—

WAGON COMPANIES.

10	Birmingham Wagon Co. [L.]	10 0 0	21	22
20	British Wagon Co. [L.]	10 0 0	3½	3¾
20	Sheffield Wagon Co. [L.]	15 0 0	3¾	4¼
10	Yorkshire Wagon Co. [L.]	10 0 0	3¾	4

TELEGRAPH COMPANIES.

"St."	Anglo-American	100 0 0	59¾	60¼
10	Brazilian Submarine	10 0 0	5¾	6
20	Direct United States Cable	20 0 0	7	7¼
10	Eastern	10 0 0	5¾	6
10	East. Exten., Australia and China	10 0 0	6¼	6¾
10	Great Northern	10 0 0	7¼	7¾
25	Indo-European	25 0 0	19	20
10	Mediterranean Extension	10 0 0	2¾	3
8	Reuters	8 0 0	10	11
Stk.	Submarine	100 0 0	200	210
10	West India and Panama	10 0 0	⅝	⅞
20	Western and Brazilian	20 0 0	5¾	6¼
$1000	Western Union, 7 per cent. Mort. Bonds	$1000	104	106

MISCELLANEOUS.

Stk.	Atlantic and Great Western Leased Lines, Rental Trust	100 0 0	38	40
25	Austral. Mort. Land and Finance [L.]	5 0 0	3¾	4¼
25	Australian Agricultural	21 10 0	89	91
10	Avonside Engine [L.]	7 0 0	4	3
Stk.	Baltimore and Ohio, 6 per cent.	100 0 0	109½	110½
Stk.	Cent. of New Jersey Con. Mort.	100 0 0	95½	96½
Stk.	Cent. Pacific of Calif., 1st Mort. 6 p.c.	100 0 0	97½	98½
25	City of London Real Property [L.]	12 0 0	par	½
25	Copper Miners of Eng. (7 p. c. p. ef.)	25 0 0	4	4½
5	Credit Foncier of England [L.]	5 0 0	⅞	1⅛
5	Diamond Rock Boring	4 10 0	1¼	¾
15	English and Foreign Credit	8 0 0	3½	2¾
15	Foster, Porter, and Co. [L.]	10 10 0	9½	10½
5	Gen. Phos. & Chem. Works Co. [L.]	5 0 0		—
1	Glaisdale Whinstone Quarry	1 0 0		—
17	Hudson's Bay Company	17 0 0	19½	19¾
10	Huntington Copper and Sul. Co.	9 0 0	8½	9
Stk.	Illinois Central, $100 shares	100 0 0	86	88
Stk.	Illinois & St. Louis Bridge, 1st Mort.	100 0 0	85	87
Stk.	Ditto, 2nd Mort., 7 per cent.	100 0 0	55	60
Stk.	Illinois Cent. Sinking Fund, 5 p. cent.	100 0 0	96	97
Stk.	Ditto, 6 per cent.	100 0 0	107	109
7½	Imperial Credit [L.]	7 10 0	7	7½
—	Ditto, Surplus Certificate	—	5	5½
Stk.	Lehigh Val. Con. Mort., A, 6. p. cent.	100 0 0	102	103
10	Milner's Safe [L.]	10 0 0	11	12
25	National Discount [L.]	5 0 0	8	8½
Stk.	N. Cent. Rail. Con. Mort., 6 per cent.	10 0 0	92	93
5	Patent Gunpowder Company	5 0 0	4½	4
Stk.	Ditto, Con. Sink. Fund, 6 p. ct., 1905	100 0 0	100	101
50	Peninsular and Oriental Steam	50 0 0	35	37
Stk.	Pennsyl. Gen. Mort. 6 p. cent., 1910	100 0 0	107	108
Stk.	Scottish Aust. Investment Company	100 0 0	165	175
Stk.	Ditto, 6 per cent. Preference	100 0 0	118	123
10	Silber Light (ord. sh.)	10 0 0	5	6
20	Suez Canal shares	20 0 0	29	31
12	Telegraph Construc. & Mainte. [L.]	12 0 0	22½	23½
5	Ditto, Second Bonus Three per Cents	5 0 0	2⅞	3⅛
10	Tharsis Sulphur and Copper Co.	10 0 0	19¼	19¾
Stk.	Union Pacific Land Grant, 1st Mort.	100 0 0	89	91
Stk.	Union Pacific Railway, 1st Mort.	100 0 0	94	96

b, blende; cl, coal; c, copper; g, gold; l, lead; s, silver; sl, slate; s-l, silver-lead; t, tin; z, zinc.

* Limited Liability Companies; † quoted on the Stock Exchange; ‡ have paid dividends.

London: Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH (the proprietors), at their office, 26, FLEET STREET, E.C., where all communications are requested to be addressed.—May 13, 1876.